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ABSTRACT

The purpose of this report on educational research activities in Quebec was to provide a basis for planning and coordinating this research in the province. Four different populations: deans, professors of education, graduate students in education, and educational researchers in contexts other than faculties of education were studied. The general formats of the 5 chapters of this report were held as parallel as possible. The first 4 chapters deal with information provided respectively by: (1) deans; (2) members of faculties of education; (3) students; and (4) researchers in other contexts. Chapter 5 presents the summary and conclusions. The recommendations are at the end of the report. Each of the chapters deals with most of the following topics: background (rank, training, experience), current activities, attitudes related to research, factors related to undertaking of research, kinds of research being undertaken, interaction with other scientific personnel, attitudes towards interaction, problems related to the conduct of research, the training of researchers, research productivity, and research plans. (AF)

EDUCATIONAL RESEARCH IN QUEBEC:

RESOURCES, PROBLEMS, AND PROSPECTS

1968-1969

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FOREWORD

On its fifth meeting, in November 1967, the Planning Committee for the Development of Educational Research[1] charged a sub-committee to establish "suitable methods of determining the state of educational research in Quebec and (to take) the necessary steps to carry out this inventory".

The sub-committee met in July 1968 and adopted a general plan for the proposed study, which was to aim at a survey of the individual researchers, the research setting in which they worked, the resources available to them, their research activities, and of the research community in general and its research ideals.

In the early stage of the planning, the Institute of Research in Education (I.R.E.) invited the author of an extensive study in the United States[2], Dr. Sam D. Sieber, to discuss the study with the sub-committee, and to meet with the deans of the Quebec faculties of Education. Dr. Sieber was very helpful in describing his own experience and in providing the sub-committee with relevant material.

The first questionnaire - to the deans of faculties of Education - was then developed and Dr. Jean-Marie Joly, director of the I.R.E., conducted the interviews where the deans answered to that questionnaire.

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1 An advisory body to the Minister of Education.

2 SIEBER, Sam D. & LAZARSFELD, Paul F. The Organization of Educational Research in the United States, Bureau of Applied Social Research, Columbia University, New York City, 1966.

At this point of the survey, the sub-committee recommended that a team be charged with the elaboration of the other questionnaires and with the analysis of the results. The I.R.E. then appointed Dr. Gabriel Breton, of Sir George Williams University, Mr. Keith J. Dowd, of Bishop's University, and Dr. Eigil Pedersen, of McGill University, and assigned Miss Thérèse Annette Faucher, of its own staff, to pursue the different phases of the work.

This team drew up three questionnaires - to professors of faculties of Education, to students in Education, to researchers in various organizations. The questionnaire for faculty members was pre-tested, by Dr. Breton with French-speaking professors at the University of Ottawa, and by Mr. Dowd, at the University of New-Brunswick.

By June 1969, the three questionnaires had been sent out to the different populations. Dr. Breton had to resign at this moment, and the analysis of the results and early stages of the writing were conducted by the three other members of the team.

Finally, the writing of this report, and of a more detailed study still to be announced, was assumed by Dr. Pedersen, who is responsible for the statements and conclusions therein. The French text was written by Miss Faucher.

From the building up of the questionnaires to the end of the analysis, the data processing service of the Quebec Department of Education (SIMEO) offered an indispensable collaboration, especially through Mr. Benoît Breton, Mr. Bernard Gâteau and Mr. Jean-Jacques Scoriot.

A great number of tasks were performed at the I.R.E. Two main groups were involved in these: from the beginning, the secretariat provided varied clerical help and we wish to acknowledge in particular, the patient and efficient collaboration of Mrs. E. Normand and Miss F. Robitaille; the other group was a team of four I.R.E. members who, under the leadership of Mr. Paul Lemire, was charged with the preliminary check of numerous contingency tables.

We wish to express our gratefulness to Deans C. Wayne Hall, of McGill University, Richard Joly, of the University of Sherbrooke, John Macdonald, of Sir George Williams University, Gabriel La Rocque, of the University of Montreal, Jean-Yves Drolet, of Laval University, and James Angrave, of Bishop's University, who gave long interviews and then read and commented on the draft report on these interviews; to Deans Lionel Desjarlais, of the University of Ottawa, and Robert J. Love, of the University of New Brunswick, who made possible the pre-test of the questionnaire to professors of Education, and to the members of their faculties who participated in this pre-test; to the members of faculties of Education, to the students, and to the other respondents to our different questionnaires.

This report contains neither a list of research projects, completed or underway, nor a list of researchers working in Quebec. Such lists are being drawn up, and the I.R.E. is already able to provide lists of researchers or projects concerning specific fields. It is the hope of the I.R.E. to set up an Index which can be kept up-to-date, thanks to the collaboration of the researchers.

INTRODUCTION

This monograph is a summary of a larger volume which reports the results of an inventory of educational research in Quebec. The project was undertaken in order to provide a basis for planning and coordinating educational research within the province. Hence, it deals with information about university, public, and private research organizations, and the people who work in them.

The work was undertaken by the Institute of Research in Education upon the advice of the Planning Committee for the Development of Research in Education. Since the I.R.E. was established to service the educational research community in Quebec, it was necessary to obtain exact information about that community - its human and material resources, and the needs and interests of the researchers. Another major aim was to learn about the factors that are related to research productivity, both in the past, currently, and in the future, through the plans of those already qualified, and the training of new researchers.

Populations Studied

Four different populations - deans, professors of education, graduate students in education, and educational researchers in contexts other than faculties of education - were studied, in each case through the use of a particular instrument designed for the purpose. An interview schedule, including a standard set of questions, was designed for use with the deans, and a series of three separate but parallel questionnaires were developed to

obtain information from professors of education, students, and other educational researchers. The design stage included the study of instruments used in previous projects of this type which were carried out elsewhere. Of particular importance in this phase of the work was the Sieber and Lazarsfeld questionnaires[1], and other questionnaires, materials, and advice presented by Dr. Sieber.

All instruments were produced in English and French. The first of the three questionnaires was tested in both languages, through the kind cooperation of professors at the University of Ottawa and the University of New Brunswick.

Collection of Data

In the late fall of 1968, the deans of faculties of Education[2] in the six Quebec universities[3], were interviewed.

In January 1969, 235 questionnaires were sent to full-time members of the faculties or departments of Education of the same universities; two thirds of these professors responded.

The student population was difficult to determine because of the complexity of structures where graduate training in education

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1 SIEBER, Sam D. & LAZARSFELD, Paul F. Op. cit., Appendix F

2 "Deans" in this report refers to deans of faculties of Education or chairmen of departments of Education, depending on the organization of the particular university.

3 At that time, the University of Quebec was not yet established. The six universities mentioned are Bishop's University, Laval University, McGill University, University of Montreal, University of Sherbrooke, and Sir George Williams University.

is offered. In fact, 1 788 questionnaires were addressed in March 1969, to full-time and part-time graduate students in faculties of Education, departments of Psychology or Sociology, *Écoles normales supérieures*, and to a number of Quebec residents studying at universities outside the Province. Fifty one per cent of this population answered the questionnaire.

Finally, a questionnaire was distributed in May 1969, to 585 persons who, we assumed, might possibly be engaged in research related directly or indirectly to education. These included non-education professors, professional researchers, teachers, guidance counselors, and administrators. The organizational contexts included departments of sociology and psychology of universities, colleges, normal schools, school boards, teacher organizations, private research institutes, and government agencies. In this fourth phase, we were aware that many should be canvassed to obtain responses from the few to whom our questionnaire would be appropriate. Therefore, the questionnaire included instruction to the subjects to answer only a special answer sheet unless they clearly had educational research interests. The response rate was 46 per cent. Of these, 137 had provided answers to the whole questionnaire, and these answers are the basis of part of this report (chapter IV).

The response rates to the three questionnaires resulted from an initial request and two follow-up letters. Anonymity was guaranteed to all groups of respondents: hence, no individual respondents are identified, and letters are used to designate the universities. The information obtained is relevant to the academic year 1968-69 only.

Definition of Educational Research

Instead of providing a definition of educational research, we presented a standard question to all four groups of respondents asking them to identify activities which, in their opinion, constituted educational research. Their responses revealed points of agreement and dissent. These are presented in Chapter V, p. 68.

Since one of the main aims of the inventory was to determine factors related to research productivity, this lack of agreement on the part of respondents as to what educational research is, poses some difficulties.

We have taken this into consideration in our work, and feel fairly confident that in the productivity analyses, the problems have been overcome.

General Plan of the Chapters

This presentation is divided into five chapters. Each of the first four chapters deals with a separate sub-sample. Thus, Chapter I presents information provided by the deans, Chapter II deals with data obtained from members of faculties of education, Chapter III is based on students' responses and Chapter IV on the replies of researchers in other contexts. Chapter V summarizes and concludes the presentation of the findings for the sample as a whole.

The general formats of each of the five chapters are kept as parallel as possible. The topics dealt with are the following,

in order: background (rank, academic and professional training, experience, and the like), current activities, attitudes related to research, factors related to the undertaking of research (career advantages resulting from research, sabbatical leaves, factors influencing the choice of research problems, and needs of the researchers), kinds of research being undertaken, interaction with other scientific personnel, attitudes towards interaction, problems related to the conduct of research, the training of researchers, research productivity, and finally, research plans.

The characteristics of the three large universities are presented at the beginnings of Chapters II and III. Discussion of the other three universities separately was avoided because of their small size or very recent origin, both of which make generalizations dangerous if not meaningless. In each chapter, there is a general description without regard to particular universities. Throughout these descriptions, we present the results of analyses which relate research productivity to factors such as training, opinions, other activities, and so on. These analyses are always based on the whole sample, and not just the largest universities. The chi square test was applied to contingency tables for these analyses, and the criterion for statistical significance applied is the .05 level of confidence or better.

Chapter I

DEANS

The purpose of our interview with the deans of the six Quebec faculties of education was to obtain from them their perception of the present condition and the future of educational research in their faculties, which would assist us, taking all their answers together, to develop some ideas about the future of educational research in Quebec as a whole. We therefore asked them questions about their students, the programs and policies of their faculties relating to research and other activities, and about themselves, their background, training, interests, and opinions relating to educational research. Their answers form the basis of the information summarized in this chapter. It must be borne in mind that the statements made here refer to Quebec as a whole, and in the case of almost every statement some particular faculty will be exceptional.

Students

The responses of the deans indicate that for the province as a whole, only one graduate education student in five was enrolled in a program in which research training and experience would result because of the requirement to produce a thesis. Further to this, it was found that of this group for whom the thesis was required, only one in six was working at the doctoral level. This indicates that at the time of the survey in 1968-1969, less than three per cent of graduate students in education were committed to pursuing research at the level of sophistication required for the doctorate. In the light of this information,

we are forced to conclude that the outlook for the future production of educational research in this province is rather bleak.[1]

An attempt was made to discover why such a small proportion of graduate students in education was involved in research. One fact which came to light was that under one per cent of these students work as research assistants. This seems to be related to the fact that research careers are not foreseen for even a small proportion of graduate students in education. The great majority are preparing to work in public school systems. On the whole, it seems that graduate training in education is much more frequently motivated by a desire for advancement in public education to administrative or specialist posts than by a desire to carry out research. According to the deans, virtually none of

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[1] Of course, like other provinces or states, Quebec is not entirely dependent upon its own institutions of higher learning either for the production of a well-educated population or for the development of a corps of well-qualified educational researchers large enough to meet its own needs. However, the province has made a commitment to the upgrading of its entire educational system and it seems to us that a capacity to produce educational researchers must be an important part of that commitment. It is true that many of the educational researchers currently working in the province have been trained elsewhere, and it will probably always be advisable to recruit a significant proportion of researchers from the outside no matter how efficient our own production becomes. To avoid being overly dependent upon other societies, we will need to be in a position where a substantial part of our own needs for educational researchers can be met locally. In addition, a proportion of the educational researchers that we produce will go elsewhere to pursue their careers. In this regard, we feel that Quebec, like other provinces and states, must be in the position to export as well as to import educational researchers.

However, it must not be forgotten that Quebec is linguistically unique in North America; this may impose difficulties for English-speaking researchers from the United States for example, who might otherwise like to work at Laval University or the University of Montreal. Furthermore, we should be careful to provide adequate opportunities for the training of researchers in French in Quebec, to accomodate those for whom language difficulties in English-language graduate schools might be a serious problem.

the graduates of recent years preceding our survey had moved on to research posts, and they informed us that they had not received requests for candidates for research posts in the previous three years. The lack of emphasis on research at the graduate level in education, therefore, seems to be related to a lack of demand for researchers in education.

Graduate students who learn research skills often do so as a result of a great deal of individual or small-group contact with a professor who has an on-going research project of some kind. (As we will assert later, this is also true in the case of Quebec students). Because of this, we attempted to determine the extent of the contact graduate students in education had with their instructors.

Fewer than one in one hundred graduate students in education hold the post of "research assistant" and this is probably the closest thing to a research apprenticeship system that has been devised in universities. The lack of personal contact of students with professors seems to result from high student-teacher ratios; the proportion of students to professors in graduate education programs are often higher than is desirable even at the undergraduate level.

One way of overcoming this high student-professor ratio is through the use of visiting professors for summer school programs and while this expedient may solve the problem of filling the need for courses, it does not provide the kind of long-term contact between professors and students that would

lead to much collaboration with regard to research projects; we know of no summer school graduate programs which last longer than six weeks.

Another solution to the poor professor-student ratio in graduate education programs is collaboration with other faculties. While this is common in French universities, in which graduate students in education are required to take courses in other faculties, it is rare in English universities. There appears to be some ambivalence among the deans of education about the quality of contact obtained through interaction with non-education academics, and this seems to result from the unwillingness of certain other academics to associate themselves too closely with professors of education in a professional capacity. Professors of education sometimes have low prestige in the universities, and may be somewhat sensitive to what they interpret as attitudes of academic superiority on the part of other professors.

There is only one area in which interaction with members of other faculties is almost universal, and that is in the area of thesis-evaluation. However, it must be pointed out that this form of collaboration with professors of other faculties applies only to a small minority of students, does not involve personal contact of student and professor. Unless the student fails his first submission, this collaboration often comes too late in the research process to result in the external professor's having any direct influence on the quality of the research or on the research training process.

Faculty

A majority of the members of the faculties of education are not engaged in research themselves, as our interviews with the deans revealed; it is therefore not difficult to understand the low level of commitment to research among graduate education students. It seems that there are many factors which do indeed make research as a major commitment for members of faculties of education difficult if not impossible.

Overall, deans express a preference for professors of education to have obtained most of their academic training for their higher degrees in schools of education, rather than in academic graduate departments. In view of the history of the development of schools of education, and the fact that the emphasis on research in many of these schools is a recent development, we may be involved here in some kind of self-perpetuating cycle that cannot be broken unless many new faculty members are recruited from among the graduates of non-education faculties. Yet, we observe that while the French deans as a group are favourable to hiring new faculty from among non-education graduates, the deans of the English universities expressed a strong preference for new professors with graduate degrees in education. This probably reflects a theme that has run through all our sources of data; with the exception of University F, which has a new and small department of education, the English faculties of education are overwhelmingly concerned with teacher-preparation. This being the case, the concern of the English deans for professors with graduate education background is understandable; however, the implications of this for the production of researchers are clearly negative, in the light of our self-perpetuating cycle hypothesis.

The need of the educational community for services of various kinds (in-service training courses, workshops, consulting, etc.) results in pressures in addition to the normal teaching responsibilities which absorb the time and energy of professors of education that might otherwise be devoted to research.

The small number of professors of education who have had sabbatical leaves may indicate a lack of interest on the part of the faculties who would not encourage independent study in this way. Another way of interpreting these data is that faculty members themselves have a limited concern for research, and do not take advantage of sabbatical policies. Also, in those very few cases reported, the research done during leave was simply that which completed the thesis requirement for a Doctor's degree.

In summary, it appears that by training, background, present experience, and current activities, the great majority of education faculty members are better oriented to the preparation of teachers, specialists, and educational administrators than to the production of either research or researchers.

Deans

The deans were asked to provide information about their own backgrounds and to explain their attitudes concerning their own roles, and those of their professors.

Five of the six deans have at some stage of their careers been teachers in school systems. Among the other posts held by

them were principal of schools, other administrative posts, guidance counsellor, school inspector and subject supervisor in the provincial Department of Education. It can be concluded that they are very well oriented in terms of experience to teaching, but this can not be said for their orientation to research. Apart from thesis research, none has ever spent as much as a half year in which research was a major responsibility, and none has ever been a staff member of a research organization. Further, only two of the six have taught courses in either research methods or statistics.

Not only is the background of deans found to be less related to research than to teaching, but the current research activities among deans is at best scanty. Only one dean was currently involved as principal researcher in a research project of an empirical nature. Because of the heavy demands of administering the faculty, it may be unreasonable to expect deans to conduct any research personally. But what seems to us more likely to explain this small commitment to research is that the education deans, like their own faculty members, have been recruited or selected largely on the basis of their background and experience which would qualify them best for teacher preparation. As a result, their attitudes to research might have been expected to be less positive than might otherwise have been.

Despite the foregoing speculations, the deans are positive in their attitudes to research. They agree that research activities help to make the professor a better teacher. This is reflected in a number of concessions they have made in terms of lighter work load, by the reduction of committee and practical

teaching supervision duties to professors who were involved in research. However, in view of the demands for teacher preparation and other services to the educational community, we interpret the deans' remarks to indicate some difficulty in offering really strong incentives to conduct research, particularly in view of limited resources.

The limited resources can be inferred not only from general statements made by the deans, but also from specific information provided. For one example, only half of the faculties of education had research items on their budget, and these tended to be very small. For example, the largest faculty research budget reported was $10,000.[1] For another example, only one faculty had functioning research centers or units, and there was only one other university at which future plans included the intention to create such centers or units.

The positive attitude of deans to research may also have been dampened to some extent by the attitudes of their professors. This seems especially likely on the French side where deans believe that their faculty members desire of them to facilitate research only, but not to encourage it actively.

Research topics considered important by deans differ a little on language lines also, with English deans expressing an interest in research in Guidance and Counseling, whereas French deans desire that more priority be accorded to research in Reading and in Tests and Measurements. Regardless of language,

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[1] A first draft of this report was submitted to the deans. One of them informed us that there has been a moderate increase in the faculty research budget, since that time. From another faculty, we have learned that the research budget has been discontinued.

however, deans are significantly more in favour of research in areas related to school curriculum than in non-curriculum areas such as Tests and Measurements, Research Methodology, Child Development, and others.

In summary, we can conclude that deans have been selected on the basis of their background and experience for teaching and not on the basis of their orientation to research. This makes it seem likely that their attitudes to research, while not antagonistic, might be less actively positive than had some other basis of selection of deans been used. In fact, all deans but one feel that research as the exclusive responsibility for any professor of education would not be a good thing. Only one had specific plans that might result in a major increase in research activity. The amount of interaction among the six deans at meetings of Canada-wide organizations where research papers might be presented and discussed seems to be very small.

These facts about the deans themselves, together with information provided by them about their students and faculty do not give us much basis for optimism with regard to future research productivity in education in Quebec. While there is in no way any attempt here to blame the deans for our pessimism, it is interesting to note that the response of one dean to a reading of this statement in draft form does not make us more optimistic.[1]

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[1] a) One dean remarked:"...as long as the universities are restricted in the expansion of the teaching staff and have on-going commitments in teacher education, it is understandable that staff with a major research commitment cannot be engaged".

b) The closing of the normal schools will result in a heavily increased responsibility for teacher preparation on the part of the French faculties of Education.

There are factors which can help us to feel confident of improvements in the future. One of these is that the faculties of education in Quebec are relatively new; it may be that as time passes, research can become established. Another factor is the recent and continuing availability of research funds in education. Also, in response to a question as to what they would do with large research budgets, were these made available, the deans elaborated imaginative, bold research projects which would undoubtedly greatly increase the emphasis on research in the future.

Finally, it must be recalled that all the data included in this chapter were obtained from interviews with six individuals. The information included is based on our interpretation of the judgements and opinions of the deans only. Following chapters, while dealing with some new ideas, will include the observations on similar questions of large numbers of professors of education and their students, as well as those of scientists pursuing research in education from locations other than faculties of education; these include faculties of arts and science, normal schools, school boards and non-university research organizations of variqus kinds.

Chapter II

MEMBERS OF FACULTIES OF EDUCATION

In this Chapter, we will adhere to the following format: first, we shall attempt to summarize those characteristics of the three universities which make them somewhat different from each other; second, we shall present general conclusions which can be drawn from the information relating to the three universities, and presumably applicable to the six universities included in the study. The results of analyses of factors related to research activities will be interspersed throughout the chapter.

The descriptions of the three unidentified universities are presented to illustrate the fact that differences do exist in the patterns related to research.

University A

The overall impression that we get at University A is one of a high commitment to research activities. The mean rank is high at this university. By comparison to the other two universities, a higher proportion of its faculty usually teach summer school. Its faculty members work longer hours during the regular school year, and are more likely to teach summer school than elsewhere, at the same time devoting a higher proportion of their work time to research. This may result from the fact that a higher proportion of faculty members in University A perceive that they derive certain advantages from doing research than their counterparts at University C, and especially than those at University B, such as extra pay, assistance in attending professional conferences, and greater freedom in defining their job assignments. Another evidence of high commitment to research is an awareness on the part of the respondents that faculty resources are strained because of the smaller teaching loads assigned to researchers. This commitment and the cost it incurs is a matter of which respondents seem to

be well aware; yet, at least one third of the respondents here feel that it should be possible for a faculty member heavily engaged in research to be free from teaching responsibilities. This is consistent with other facts: for example, more respondents at this university feel that, in making faculty appointments, the research graduate degree should be given preference over the professional graduate degree than at the other universities.

There are some indicators that the quality of research undertaken by respondents at this faculty is probably higher than that done elsewhere. For example, researchers here tend to use inferential statistics whereas those elsewhere are more likely by comparison to use a merely descriptive statistical kind of analysis; this suggests a more sophisticated level of research. Another indicator is that a higher proportion of researchers here than elsewhere have held more than one grant, suggesting greater depth of experience. In terms of the size of research projects, the fact that a higher proportion here than elsewhere requested large grants (over $10,000) and that a higher proportion indicated the need for specialized consultant services and personnel, suggests that large scale work is being undertaken.

In summary, it appears that University A devotes the resources, has the qualified faculty with research experience, emphasizes research programs, and carries on sophisticated research more than the faculties of education in Universities B and C.

University B

By comparison to the Universities A and C, University B appears to have a major emphasis on teacher training activities; this is apparent in many ways, and it is likely that this works to the detriment of research activities. Among the indicators of this preoccupation with teacher training is that over 80 per cent of the faculty hold teaching certificates, more than half have elementary teaching experience and three quarters have taught in secondary schools. Of the three larger universities, the smallest proportion of respondents at B apparently have research experience, and this is in spite of the fact that the sample of respondents from University B is biased in such a way that research-minded faculty members are over-represented in our sample. This suggests that the vast majority of faculty members at University B have been selected with their qualifications for teacher training in mind rather than for research abilities.

Teaching duties at University B are heavier than at the other two universities. By comparison to Universities A and C, more faculty members here are responsible for committee work, and duties other than research account for a larger proportion of their work week than elsewhere. It appears therefore that the situation here is less conducive to the conduct of research than at the other two universities.

In terms of their own perceptions, faculty members here are less likely than those at the other two universities to feel that there are advantages to be gained from doing research. In fact, more than half perceive no allowances of any kind for researchers; by comparison to University A, the resources here are not being strained on behalf of research activities.

In making faculty appointments, respondents at University B perceive that the emphasis between research and professional graduate degrees is about equal, and they feel that neither type of graduate degree should be given preference. It is not surprising therefore that respondents at B indicate theirs to be the least likely of the three universities to direct students into research graduate degrees.

In terms of desirable characteristics of candidates for faculty appointment, it is again clear that the members of this faculty have the lowest commitment to research of the three universities. They are almost exclusively in favour of appointing professors with training from a school of education and often with public school teaching experience in their field. With regard to the type of programs they feel that graduate students are being directed into, the professors at this university are more likely than others to state that the emphasis given to the research graduate program compared to the professional graduate program is sufficient or excessive.

With regard to the proportion of the faculty that should be involved in supervising student research, the opinions of respondents at University B tend to be divergent compared to those of respondents at the other two universities. Perhaps this implies a greater diversity of backgrounds and specializations of function at B than elsewhere. It may be that while every new professor recruited at Universities A and C is expected to do some research, the pattern at University B requires only some to have a serious commitment to research.

Respondents here are less likely than those at Universities A and C to agree that other departments or faculties should be involved in evaluating education students for the degree.

In terms of their own research activities, a smaller proportion here claim to have done any research at all than at the other universities. Compared to the others, only half the proportion at University B report research projects completed in the past. In addition, those who do carry out research projects are far less likely than similar respondents from Universities A and C to be spending ten hours or more per week on their research activities. Furthermore, this faculty has the smallest proportion of its respondents reporting plans for carrying out research in the next two years. Despite their higher degree of experience at the secondary school level they are less inclined to use secondary students as a major source of data for research purposes. This suggests that they do not tend to exploit their contacts in the schools for research activities. This smaller research activity at University B is consistent with the fact that when respondents at this university do request funds for research, they tend to ask for smaller sums than respondents at the other universities.

Not only are the respondents here less committed to the pursuit of research themselves, but about a third indicate that they are not interested in information about on-going research at the pre-publication stage. In addition to this, they are consistently below other respondents in the degree of their collaboration with others in research activities.

One further comparison: in our description of University A above, we intimated that the commitment of the university resources to educational research seems to be high. By contrast, the reverse appears to be true at University B where the availability of personnel to assist respondents in their research activities is in general the lowest of the three universities.

University C

While fairly clear patterns emerge for Universities A and B (research-oriented and teacher training-oriented, respectively), it is more difficult to arrive at a picture of any particular emphasis at University C. The position of this university seems to us to be intermediate in outlook between the extremes represented by the other two. For example, it is here that the highest proportion of the respondents feel that most faculty members should do some teaching and some research. Teaching duties are lightest at this university and a larger proportion here spend fifteen hours or more a week on research - their belief in a dual role seems to be reflected in their own activities. Further, 80 per cent of the respondents here devote less than five hours a week to the supervision of students. In contrast to the other universities, where about one third of the respondents find themselves eligible for sabbatical leave, here only one in ten considers himself eligible. If this in turn means a small number of years of service at this university, then it would follow that many of the respondents do not yet have the seniority to rise above the rank of lecturer.

If any characteristic pattern emerges, it is the one that we have mentioned of a dual role combined with heavier interaction with professional personnel at the university level (examination committees for thesis evaluation, assistance of out-of-faculty personnel in the selection of the professors, and other kinds of interchange) as well as a tendency to have more contact with personnel in the public school systems such as principals, teachers and pupils. Of the professors at the three universities, these are the most likely to have plans for research in the next two years.

UNIVERSITIES IN GENERAL

Definition of Research

There are considerable areas of agreement in regard to what should be included in the definition of educational research. A large majority of respondents agree that the investigation of factors which affect the teaching-learning process in the classroom, the evaluation of the effectiveness of new curricula and methods, and general psychological studies of human learning and development should be part of the definition. Also, there is general agreement that the following two items do not legitimately constitute educational research: "presenting evidence to legislators of the need for greater support for the schools"; and "studying the educational research journals for lecture materials".

However, there are also areas of marked diversity of opinion; for example, about half the respondents believe that "designing new curricula and methods of instruction" is research whereas the

other half believe it is not. Other areas where respondents are almost evenly split include: "analyzing the key concepts or philosophical assumptions underlying current educational issues" and "investigating factors which affect school administration".

Curriculum is an area in which very little research is done by educators; however, educators tend to concur that curriculum research should be included in the definition of educational research. In fact, there is only one other item in the list more frequently agreed to than curriculum research, which is "investigating factors which affect the teaching-learning process in the class-room".

Academic Rank and Background

Over a third of the respondents in general hold the rank of Professor or Associate professor (35 per cent), and yet, only 29 per cent of those who are doing research hold these ranks. It appears that rank is inversely related to research productivity. The vast majority of members of the faculties of education hold at least one undergraduate degree, but fewer than a third (29 per cent) have actually completed a Doctor's degree with thesis. If we add to this group those who are working towards a doctorate with thesis, we find that just over half (55 per cent) have any past or current commitment to training at this level. While we do not have the figures to compare this with members of other faculties, we feel that the proportion with doctorates is low; it has not been possible, however, to show any relationship between having completed the doctorate with thesis and research productivity. What this may mean is that academic training at

the doctoral level is important in faculties of education neither in terms of obtaining an appointment, nor as a prelude to continuing research activities. We feel that it would be interesting to investigate further the reasons for the fact that those who hold doctorates are not more productive in research than those who do not.

About two thirds of all respondents are certified teachers. Further, at least the same proportion have had experience teaching at the elementary or secondary levels. Yet, our analysis does not show those with teacher training or experience to be either more or less active in research than those without such training or experience. Thus our findings with Quebec data fail to replicate Sieber's finding of an inverse relationship between having teacher training and subsequent research productivity.

One of the ideas that we investigated is the possibility that work in a faculty of education may have been part of a career line going from teaching through administrative experience to a faculty position. However, since no more than 8 per cent (elementary level) and 13 per cent (secondary level) of the respondents have had administrative experience in the school system, it appears that such experience can not be taken for granted in members of faculties of education. About a quarter of the respondents indicate that they have had administrative experience at the university or college level.

Current Activities

Research is very seldom the total activity of any member of a faculty of education and the extent of other responsibilities such as teaching, will undoubtedly be related to how much time can be devoted to research. For example, 55 per cent of all the respondents indicate that they spend more than ten hours a week in preparation of their teaching activities and 27 per cent spend more than ten hours a week on teaching. It seems therefore not surprising that in view of other possible activities, such as community service and administration, less than one respondent in three claim to be spending ten hours or more a week on research activities; half the respondents feel that too little time is being spent on research. These facts take on added interest in view of the statistically significant inverse relationship between time spent on teaching and time spent on research.

Because of the fact that many researchers find the summer months a productive time since they do not have classes to teach, we investigated the relationship between summer school teaching and research productivity. Although less than one respondent in ten is required to teach summer school, and although 55 per cent say that they usually teach summer school, we are unable to show any statistically significant relationship between summer school teaching activities and research productivity. In fact, the trend is in the direction opposite to that which we had predicted.

Attitudes Related to Research

Many students pursuing graduate degrees in education do so in order to up-date or expand their practical teaching skills and we have made a distinction between those following "professional degrees" programs, and those who are working towards academic graduate degrees. The latter are usually required to do some research resulting in a thesis whereas this is generally not true of the former. Seventy per cent of the respondents are in favour of a system of degrees which makes a distinction between professional degrees without thesis (M. Ed.s, Ed.D.s) and academic degrees with research requirements (M.A.s and Ph.D.s). The attitude toward this question is not related to whether or not the respondent does research.

A large majority of the respondents - over 70 per cent - feel that the number of graduate students in education planning research careers in the future is either insufficient or seriously insufficient, and those who are spending a major part of their work week on research are more likely to be critical.

A majority of respondents are of the opinion that the importance given to research in their faculty is less than in their university as a whole. They tend to feel that teaching should be combined with some research but they also feel that policies of their institutions are not as positive towards research as they themselves are. At the present time, the conduct of research does not appear to be a requirement for members of faculties of education and about half of the respondents reject the proposal that research should be a requirement for all faculty members.

We felt that those who do research might be more insistent that all other faculty members should be required to do research than those who do not. But our analysis shows no statistically significant relationship between such an attitude and research activity. Despite this, those who spend a major portion of their work week on research, are more likely than other faculty members to be of the opinion that classroom teachers should be involved in the conception as well as in the conduct of educational research. On the whole, however, respondents feel that the conception and conduct of research rightfully belongs to teacher training professors, professional educational researchers, and behavioral scientists.

Factors Related to the Undertaking of Research

Undoubtedly, the background and training of researchers are important in terms of their competencies and research interest; in fact, two thirds of our respondents indicate that they generally rely on their training and ability as source of research problems.

Policies of the faculty and activities of the administration are also related. For example, respondents indicate that if the number of summer school students were to increase, the research capabilities of the faculty would decrease correspondingly. With regard to administrators whom they feel should facilitate and actively encourage faculty research, their tendency is to perceive that administrators actually leave research entirely to the researchers. While they do not want the administrators to direct research programs, it is apparent that they want more encouragement than they perceive they are receiving.

One way to encourage research is to provide for sabbatical leaves. Fewer than ten per cent of our respondents have ever applied for sabbatical leaves, and less than one in four feel that they are or have ever been eligible. There are indications of considerable confusion on the part of respondents vis-à-vis sabbatical policies. This is manifested by the fact that many do not know what these policies are and others, who feel they do, give various standards for the same institutions.

On the whole, respondents tend to agree that researchers obtain more prestige within their departments and more assistance from the university in attending professional conferences as a result of their research activity. In addition, respondents perceive that faculty members active in research obtain greater freedom in defining their own job assignments. In response to questions about advantages which accrue from research activity, there is always a larger per cent indicating that such advantages are enjoyed by others than by themselves. This may be an element of envy based on perception that other researchers obtain greater benefits as a result of the conduct of research than is true for oneself; conversely, it may be that many of the respondents who are not pursuing research themselves feel that those of their colleagues who are doing so, receive certain reward and incentives.

Encouragement of research activities may come from sources outside of the faculty itself. For example, half of the respondents indicate that a priority list as well as the possibility of receiving some financial support, would influence their choice of

research topics. However, the fact that few respondents cite the availability of funds as an influence on their research prior to responding to our questionnaire, should not lead us to the conclusion that the availability of funds is unimportant in relationship to whether or not members of faculties of education carry out research. The lack of relationship in the past may simply have been the result of the unavailability of funds for educational research. This is borne out by our finding that the proportion of respondents having received funds in the two years prior to the receipt of our questionnaire was very small. Forty individuals at Universities A, B and C, had applied for funds in this time. Only about half of this number had actually received support. Fortunately, the proportion seems to be expanding. Although few applied for and actually received funds, a substantial proportion indicate the existence of financial needs not being supported by grants. Grants are nevertheless related to research productivity. Of those who actually have held grants, 76 per cent have plans for research in the next two years, whereas this is true for only 53 per cent of those who have not. This difference is statistically significant.

The only major sources of funds to which Quebecers have tended to apply are Quebec-based. These include the I.R.E., the Quebec universities, the Federation of Catholic School Commissions, and the Superior Council of Education. It would seem advisable for Quebec-based researchers to look further a field and to obtain their fair share of resources available from national and international, federal government, and philanthropic granting organizations. Further, we must conclude that there is a major role to be played by an organization such as the I.R.E. in suggesting areas of research, providing information about sources of funds, and in the actual provision of funds for research.

There are apparently needs for research grants in education which are not being met, and while the patterns of amounts needed may differ by university, our analysis shows that those who have needs are in effect those who are actually doing the research. Hence, we feel justified in suggesting that more funds devoted to educational research would yield an increase in activity even giving the present researcher-resources in Quebec.

Kinds of Research Being Undertaken

Judging from the responses of the members of faculties of education, researchers in faculties of education emphasize about equally research undertaken to expand theory and research undertaken to improve practice. Faculty members usually work in areas in which they have contact and experience with the population they are studying; hence, they are most likely to draw their data from teachers, secondary school pupils and university students. Despite this tendency to draw data from familiar sources, the respondents generally prefer research in an academic rather than an educational problem area; thus they tend to prefer work in tests and measurement, educational administration, and psychology of learning to work in curriculum areas. There are some strictly educational areas which are important, and these include guidance and counselling, methods of instruction, and teacher training research.

As to methods of research, respondents prefer the use of experiments, questionnaires and existing records or data banks.

The major analytic style is statistical with a slight tendency to use descriptive rather than inferential statistics. This suggests a relatively low level of sophistication in

educational research which may arise from either one or both of two facts: first, the educational training background of some faculty members may not enable them to use inferential statistics; second, because so little research has been done in education, it may be necessary at this time to lay the descriptive groundwork upon which inferential studies can later be based.

We have noted the tendency for educational researchers to desire to work on academic areas with a view to expanding theory to the disadvantage of research related to the improvement of practice particularly in curriculum areas. This is equally true of those who are trained teachers and those who are not. Faculty members would like to see more research undertaken in the areas of teacher training, talent and creativity of students, school-community relations, and teaching as a profession. Comparing present research to their statements of what kind of research would be desirable, we find little interest in expanding research in the curriculum area, and we are left wondering who will do curriculum research, if not professors of education.

Interaction with Other Scientific Personnel

Respondents appear to be favourable to the involvement of other departments and faculties with graduate students in education, especially in providing them with a part of their training. But less than half of the respondents have ever worked together with colleagues even in their own organizations, and only a quarter say that they have worked with researchers in other organizations. A majority of professors of education have not had contact with other educational personnel during the year for research purposes. It seems that educational researchers usually work alone.

The tendency for educational researchers not to involve themselves in direct interaction with other personnel seems to parallel the organizational isolation of faculties and departments of education. There is very little sharing of research or library resources on the part of faculties of education. Isolationism seems characteristic of both individuals and organizations in this field.

Attitudes Towards Interaction

There is a certain degree of interaction with members of other faculties particularly in regard to teaching courses and participating in committees for the examination of theses, but there is a desire for more interaction. Well over half of the respondents indicate a desire for interdisciplinary committees or seminars concerned with scholarly issues and 58 per cent of the respondents are in favour of visiting professors from other faculties of their universities to carry out research in education.

Attitudes toward interaction appear to fall short of any desire on the part of members of faculties of education to be under the control of members of other faculties. Only 17 per cent of the respondents indicate a desire for the participation of non-education professors in the selection of new members of the faculty of education.

Those who do research appear to be more favourable towards interaction than those who do not. For example, they are significantly more likely than non-researchers to approve of interchanges on examination committees for theses, to be in favour

of joint research appointments, and to be in favour of visiting professors for teaching. Further, those actually involved in research activity, are significantly more frequently involved in activities with members of other university departments than those not involved in research.

Problems Related to the Conduct of Research

We have already reported the fact that although educational researchers feel that certain advantages can result from the pursuit of research, a majority of our respondents perceive that the faculties of education put less emphasis on research than other faculties in universities. This is probably related to the fact that teacher preparation is an area of major responsibility and receives a great deal of time, attention, and resources. Thus, researchers are aware of problems related to a need for equipment, and the need for information about research, both on-going and completed. Also, many researchers note that there is a need for secretaries and typists. In fact, those faculty members who have obtained research grants tend to use the funds for secretarial and clerical assistance more than for any other category of personnel. Despite the encouragement of research, more than a third of the faculty members are unaware as to the existence or not of a research item in their faculty's budget.

There is no doubt that the greatest need felt by the largest proportion of respondents is for financial assistance. There are statistically significant relationships between the degree of research activity and the need for personnel to assist both in the clerical and technical aspects of conducting research; one area of very common need is guidance to sources of funds which

would help to overcome these problems. Another important hindrance to the conduct of research appears to be a shortage of time but this is apparently considered to be an internal problem to be solved by the university.

Training of Researchers

No study of research productivity would be complete without an attempt to understand something about prospects for future research potential. A large part of this potential probably resides in those who are at present pursuing graduate degrees in education. But, this is true only of those whose graduate degrees are academically oriented and require research.

A majority of respondents feel that students should make their own choice as to whether they should undertake professional or research graduate degrees in education. However, 22 per cent indicate the belief that students should be directed into research graduate programs but only 12 per cent perceive that this is actually the case. Further, respondents feel that the emphasis given to the research graduate program is insufficient or greatly insufficient, both in the province and in their own faculties.

One of the characteristics that make faculties of education different from other faculties is that much of the graduate training is provided through summer school. But a majority feel that a graduate research degree achieved during the summer does not measure up in quality to one achieved during the regular academic year. This practice of offering training during the summer may be detrimental to the development of doctoral programs.

About half of all the respondents consider that the emphasis given in their school to the doctoral program by comparison to the Master's program is insufficient or greatly insufficient.

In summary, we must conclude that the fact that most graduate students in education are enrolled in part-time Master's programs not requiring research is unfortunate in view of our need to develop sophisticated researchers in education.

Research Activity

In concluding this chapter, we must note that it seems to us that research activity on the part of members of faculties of education is low. Even taking their own definitions of research without question, almost half of the respondents have never completed research projects, and only about one in seven have completed more than three research projects. Only about two fifths of the respondents have research projects under way, indicating that a majority do not carry on research at a given time.

Research Plans

With regard to research plans, for the next two years, most of the respondents replied; a majority at Universities A and C (62 per cent and 85 per cent) replied affirmatively. However at University B, only 36 per cent indicated plans for research in the next two years.

Such a question about intentions for the future is almost certain to elicit positive responses. But the differences in response by university suggest that these responses must be taken seriously. Moreover, the relationship between planning for research and current research activities is statistically significant at the .001 level.

This concludes the presentation of the analysis of the responses by professors of education to our questionnaire. The next chapter presents findings concerning the students.

Chapter III

STUDENTS

The data obtained from the analysis of students' responses is of interest analytically by comparison to those data obtained from faculty members and deans because they represent information from independent sources bearing on the same basic problems. When information from independent sources give us essentially the same overall picture, our confidence in the validity of the data is greatly increased. Such is the case with these data.

As in the previous chapter, we will present conclusions in two sections. First, we will deal with the three universities separately; second, when the differences among the students from the three universities are not great, we will present our summary for the students as a whole group.

University A

The responses by faculty members from University A, it will be recalled, led to the impression of this university being much more research-oriented than the other two. The student responses support this conclusion; their emphasis upon research is very marked, as we would have expected it, judging from that of their professors. This comes about largely because of the fact that part-time students at University A, unlike those at Universities B and C, are equally involved in research as full-time students. For example, 79 per cent of the full-time students, and 74 per cent of the part-time students at this university have a research requirement for the degree toward which they are currently working. Although the students at this university have

the smallest proportion working on any type of doctoral program, compared with the other universities, this does not seem surprising in view of the large proportion of students here who are very young. For example, 15 per cent of the full-time students are 21 years of age or younger, and in addition almost half are between the age of twenty-two and twenty-four. In fact, respondents at this university often apply for graduate work upon registering for their undergraduate degree.

One of the most striking differences between this and the other two universities is that here the differences between degree requirements and programs for full-time as compared to part-time students are minimal. In addition, there is far less distinction between full-time students and part-time students in the extent to which they have contact on a small group of one-to-one basis with faculty members, than at either of the other two universities.

University B

Clearly one of the unique characteristics of the student body at University B is its age, 78 per cent of the full-time students being above the age of 27, and almost half of their part-time students being over 35 years old. These figures are consistent with the fact that 50 per cent of the full-time graduate students at University B have dependents. While the 65 per cent of part-time students here having dependents is not larger than at the other universities, the average age here is much higher, largely due to the fact that a great majority of students at University B - 84 per cent - are part-time students. One possible reason for their being older is that entrance to all graduate programs, except one in which the enrolment is not large, normally requires teaching

experience. It is not surprising therefore, that a large majority of students at University B have had teacher training whereas less than half full-time students at University A, and only about a third at University C, have such background. Whereas fewer than one in five at Universities A and C have had elementary teaching experience, almost half of the full-time students from University B have had such experience. Further, the proportion with secondary teaching experience at University B is double that at the other two universities. Consistent with all these findings is the fact that respondents here have the highest proportion of the three universities with industrial and professional experience in their backgrounds.

University B is the only one of the three in which the teaching assistantship is an important means of financial support for the students. Here, the students are more likely to be making a contribution to the work of the faculty in either a research or teaching role. This kind of collaboration between students and professors is probably possible to a large extent only because of the maturity of the students by comparison to that of students elsewhere. Also, in terms of absolute numbers, the fact that there are so few full-time graduate students makes this kind of activity quite feasible.

The major reason given by student respondents at University B for their decision to attend graduate school is that it will lead to professional advancement. Perhaps this is because, being older, they are likely to be in line for professional promotion and wish to add to their experience a formal qualification which will give them a competitive edge on their colleagues.

In terms of the kinds of program being followed, the doctoral degree is of almost negligible importance. (This appears to be true throughout the province.) The dominant program is the Master's with 59 per cent of the students having completed it or working at this level without thesis requirements, and 34 per cent in the same situation but with a thesis requirement. In fact, this university has the lead in enrolment in the Master's degree not requiring the thesis. There is a tendency to a heavy professional graduate commitment on the part of students. The student emphasis on professional training parallels the faculty emphasis on teacher preparation which was reported in Chapter II. The picture is consistent. By comparison to students at Universities A and C, a smaller proportion here feel that all faculty members should do some research.

As in the case of University A, we find that the information obtained from student respondents lead us to the same conclusion as those from faculty respondents. We note again an emphasis on professional graduate work rather than research at University B.

University C

Respondents at University C appear to be intermediate in age by comparison to those at Universities A and B. They are better qualified than those at the other two universities in terms of the degree they hold or are currently working toward. In addition, the responses indicate more research experience per respondent.

What really stands out at this university by comparison to the other two universities, and especially to University A, is the difference in program and treatment of part-time students as compared to full-time students. This cannot be explained on the

basis of one of two groups being negligible in size, since respondents are split almost evenly into the two categories.

While 34 per cent of the full-time students are in the Master's program with thesis requirement, only 4 per cent of the part-time students are in this category. Perhaps this helps to explain why 89 per cent of the full-time students compared to only 18 per cent of the part-time students, have regular contact with faculty members on a one-to-one or small group basis. The predominant program for the part-time students at University C is the *licence* without thesis. Only 4 per cent of the full-time respondents are enrolled in this program.

STUDENTS IN GENERAL

The reader is reminded that from this point on in the conclusions, we are dealing with student respondents in general, without regard to particular universities.

Definition of Research

Students agree with professors (see Chapter II) that investigating factors which affect the teaching-learning process in the class-room, evaluating the effectiveness of new curricula and methods, and general studies of human learning and development, constitute research. In addition, they agree that designing new curriculum and methods of instruction is research, while faculty members are almost evenly split on this item. There are however areas of disagreement among students, one of the chief being that respondents at University B include investigating factors related to school administration, whereas this is excluded by most of the other student respondents.

FIGURE I

PER CENTS OF FULL-TIME STUDENTS OF THE THREE LARGER UNIVERSITIES, OF OPINION THAT THE ITEMS REPRESENT A RESEARCH ACTIVITY

	UNIVERSITIES		
	A	B	C
a) Collecting statistics on school practices and educational outcomes, sometimes called "school status studies".	34%	59%	29%
b) Designing new curricula and methods of instruction.	73	56	73
c) Evaluating the effectiveness of new curricula and methods.	77	88	87
d) Local school surveys (curriculum, financial, plant, etc.)	35	31	30
e) Investigating factors which affect the teaching-learning process in the classroom.	80	91	90
f) Disseminating new curricula methods of instruction, or other school practices.	30	25	28
g) Investigating factors which affect school administration.	22	66	18
h) General psychological studies of human learning or development.	65	78	72
i) Presenting evidence to legislators of the need for greater support for the schools.	9	6	7
j) Developing new tests and measurements.	61	66	56
k) Analyzing the key concepts or philosophical assumptions underlying current educational issues.	34	59	47
l) Studying the educational research journals for lecture materials.	15	16	21
TOTAL N	220	32	137

The reader is reminded that these differences in the definition of research have been taken into consideration in our analysis of factors related to research productivity.

Background and Characteristics

A majority of graduate students in education are men, these accounting for about three quarters of both part-time and full-time students.

Full-time students tend to be younger than part-time students. About half of the former are 25 years of age or younger, whereas about two thirds of the part-time students are 28 years old or older.

About half of those enrolled are full-time. Of those who are part-time, the vast majority have had teacher training. Over all, two thirds of all students are certified teachers.

Those with teacher training are less likely than those without to be enrolled in a degree program which requires research, or to have past or present research experience or intentions to do research in the future. Also, more than two thirds of all student respondents have teaching experience; for them, graduate degrees are almost certainly related to hopes for promotion in current career lines rather than to future research careers.

As was the case with teacher training, teaching experience seems to predispose the graduate student not to be research-oriented, and yet most graduate students in education feel that teacher training and teaching experience should be required of prospective candidates for admission to graduate programs in education.

While there is considerable teaching experience in the elementary and secondary level, among respondents, there is very little at the CEGEP[1] and post-secondary level. Further, while there is no significant amount of school administrative experience, on the part of full-time respondents, about one fifth of part-time students have administrative experience. This kind of comparison which appears frequently in our analysis suggests that full-time and part-time programs meet different needs and that both should be regarded as legitimate and important methods of providing graduate training in the field of education.

The one road in graduate education that seems to lead to research is the Master's degree requiring thesis. Many of the academic Master's students go on to at least one further research project by enrolling in a doctoral program at some other university following graduation with the M.A. degree. By contrast, professional graduate degrees at the Master's or *licence* level generally do not lead to further research and as already pointed out, students enrolled in these outnumber thesis students by a factor of six to one. This seems to result in large part from the fact that a very great proportion of graduate students in education are only part-time students, with a full-time involvement in a teaching or other public education occupation.

Current Activities

The nature of activities undertaken during graduate training has an important bearing on present and future research capacities in the province. A majority of full-time students and just over half the part-time students say that there is a research

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1 *Collège d'enseignement général et professionnel* - a type of junior college specific to Quebec which will soon be required as an intermediate step between high school and university.

requirement for the degree they are pursuing and about two thirds of these, full-time or part-time, consider the research requirement extremely or very important. In most cases, the research requirement takes the form of a thesis study. The importance of a thesis requirement is borne out by the fact that those who have such a requirement tend to plan research after graduation, to have more contact on a one-to-one basis with professors in their research activities, to be working as assistants for other researchers. Such students are more likely to be in full-time than in part-time programs.

In addition to a thesis requirement, some students become involved in other research as well and these are generally the ones who expect to be working in the area of educational research following graduation.

Not only are full-time students more likely than part-time students to be doing research (in addition to their thesis), but they are more likely to be enrolled in compulsory research-oriented courses.

Of the graduate students responding, more than two thirds indicate that they are in receipt of scholarships and bursaries.

Other sources of support include teaching assistantships and research assistantships. The research assistantship seems to be a promising form of student support since those who have it are much more likely than those who do not, to be planning research following graduation.

Part-time students, more than full-time students, say that their research projects are of their own conception. This, considered together with the fact that part-time students have far less contact on a one-to-one or small group basis with their professors, suggests that they may largely be left on their own in their research activity.

The larger proportion of the students have their major contact in research activities with their professors; very few interact with other researchers, research assistants, student aides, or consultants.

Attitudes Related to Research

Among the various attitudes to research are those related to making a distinction between research and non-research graduate degrees and those related to the teaching and research role of professors of education.

A majority of students say that a distinction should be made between research and professional graduate degrees in education, although a small proportion argue against the distinction on the grounds that both types of training are necessary or that research should be required for every degree. Those favouring the distinction feel that it enables students to find training appropriate to their personal aptitudes.

Most students think that all faculty members should do some teaching as well as some research.

Factors Related to the Undertaking of Research

As was noted for faculty members, the most important factor in the selection of research problems is training and ability; current educational problems rank second.

On the whole, students express interest in a list of priority areas for research and agree that such a list would influence their choice of problems; in this they agree with their professors. One reason for this may well be the large proportion of those involved in research activities who have financial needs, since they feel that a list prepared by a government agency such as the I.R.E. might improve access to research funds; but many other reasons are given.

Kinds of Research Being Undertaken

Student researchers favour the use of the questionnaire for data gathering and use descriptive statistics in the treatment of data; less frequently used are the experimental method and inferential statistics. Major sources of data are teachers and students.

Attitudes towards Interaction

While a majority of students agree that other departments and faculties should be involved with graduate students in education who are pursuing research degrees, those who are active in research are significantly more favourable to such interaction than professional degree students.

Problems Related to the Conduct of Research

Research requires that those attempting it have access to equipment, bibliographic resources, data, and information.

Respondents were invited to indicate their major research needs. While equipment is not a pressing need and in general needs for data are being adequately met at all universities, the most important facilities desired by the respondents would be services and personnel related to the use of data banks and information retrieval.

There is very substantial agreement that information about on-going research at a pre-publication level is a necessity; in addition, the availability of microfiches, microfilms and abstracts is inadequate. Accessibility to populations is not a serious problem.

In reply to two open-ended questions about problems related to the conduct of research, funds for research is the most frequently mentioned item; in this, the students reflect the major concern of their professors. Improved coordination and communication, more information about on-going research, opportunity to work in teams on large projects are desired. Students express difficulties related to thesis supervision, accessibility of their professors, and make wishes for more courses on research and more practical training to do research.

It is clear that there are some difficulties faced by students in their attempts to carry out research; perhaps if steps could be taken to remedy these difficulties, better use could be made of students as research resources.

Training of Researchers

Graduate programs in education are related to the further training of professional educators, as well as to the training of researchers through the actual conduct of research. Nearly half of the students responding in this survey feel that the emphasis given to research programs by comparison to that given to professional programs is insufficient, whereas fewer than one in twenty feel that it is excessive. The students themselves, therefore, seem as a group to be aware of a need for an increased emphasis on the training of researchers through graduate programs in faculties of education. In addition to this, most of the respondents feel that there is a need to emphasize training for action research on the part of those who would later become practising teachers. This would suggest that there should be some research training for those pursuing professional graduate degrees such that they would be able to do research on instructional methods in their own classrooms.

Despite the findings reported above, there is widespread opinion that the techniques and methods used in educational research lag behind those used in behavioral sciences in general. And yet, students on the whole disagree with the statement that "persons who wish to make a career of educational research should receive most of their research training from professors in the behavioral sciences outside of schools of education". There is also some scepticism as to the value of the results of educational research for the classroom teacher.

Perhaps, these seemingly contradictory views can be understood to mean that faculties of education should recruit some experts in behavioral science research, for their own use, with

the result that graduates with more sophisticated research capabilities would come out of both research graduate programs and professional graduate programs. The result might be research findings more useful to classroom teachers.

Research Activity

Almost half of the full-time students but less than one in five of the part-time students, at the three largest universities, were actually involved in research projects at the time of answering the questionnaire. Also relevant is the fact that full-time students are far more likely to be involved in research other than that for their thesis, and this is undoubtedly an important reason for their greater contact with professors. We reiterate that a higher proportion of full-time students will almost certainly increase research potential; in addition, steps should be taken to change the nature of graduate programs offered to part-time students in education, such that their research activities are increased and improved. That this is possible is suggested by the pattern at University A where part-time students constitute only a small proportion of the enrolment and where the programs they follow appear not to be in any way inferior (from the point of view of the research component) to those followed by full-time students. This is in sharp contrast to the situation at both Universities B and C.

Research Plans

Students generally pursue graduate studies with a view to qualifying for their future careers. Graduate students in education who responded to our questionnaire tend to be planning careers in guidance counselling, educational psychology, and teaching, in that order. For our respondents as a whole group, research ranks only sixth in their career plans, with about a third indicating that they hope to work in this field either through the teaching of educational research or through the conduct of research, or both. Despite this small fraction, two thirds of the full-time students at the three largest universities indicate that they plan to carry out some research after graduation, but fewer than 50 per cent of these expect to devote half or more of their working time to this activity.

The motives for undertaking graduate training are somewhat different for our part-time respondents who do not indicate the desire to obtain research skills as frequently as full-time students. Bearing in mind that part-time students are older than full-time students and are already embarked upon a professional career, this finding accords with our expectations.

The research areas included in the plans are Psychology, teaching methods, and learning problems. Apparently, students are more oriented to the uniquely educational areas of research than their professors who, as we noted earlier, are more interested in abstract, less practical research problems. It is interesting to speculate on this difference between students and professors. Does it mean that this generation of students has a more practical orientation to educational research than

previous generations? Or is there something about the university reward structure that makes it more profitable for professors to pursue more theoretical research? Is there more prestige in this for professors? Is it easier to obtain grants for non-professional research? Are the reports of such studies easier to publish? These questions are worthy of further investigation.

Chapter IV

RESEARCHERS OUTSIDE FACULTIES OF EDUCATION

This Chapter deals with those researchers in education who are located in organizations other than faculties of education. The categories under which these respondents have been classified are: universities; school boards; normal schools, colleges; and "others". The category "others" includes establishments such as research units of teachers' associations, and government or private research agencies.

Definition of Research

We have already shown that one of the difficulties in making the comparisons among researchers from different organizations is that they do not agree on exactly what constitutes research and on what does not.

There are certain activities about which there is general consensus that they are, or are not, research. In the former category are investigating factors related to the teaching-learning process, and the evaluation of new curricula; whereas in the latter are included the study of the research journals for lecture materials, and the presentation of research evidence to legislators in the hope of obtaining certain resources. But as is true for professors and students of faculties of education, there are many items about which there is much disagreement as to whether a particular item is part of the definition of research. These include: the analysis of the key concepts and philosophical assumptions underlying current educational practices; the study of factors related to school administration; the development of new curricula and methods of instruction; and the development of new tests and measurements.

This lack of consensus as to what belongs in the definition of research makes it possible that much of what is reported in response to this survey as research may, from the point of view of some of the respondents, not really be research. From the point of view of the university researcher, the figures indicating the degree of research productivity in other organizations, especially colleges and normal schools, and school boards, may seem inflated.

Research Training and Background

These respondents are as varied in their own educational backgrounds as they are in their organizational affiliations. For example, almost all university respondents have the doctorate, whereas only one in four at the school boards have this level of formal education. If holding a doctorate can be taken as evidence of being properly qualified to carry out research, then the respondents from universities have the highest qualifications. However, there are other indicators of their research expertise; an inventory of their skills shows them to have more formal training than other respondents in the following areas: statistics, theory of measurement, methods and techniques of measurement, research design and methodology, and computer application. Further, although a majority of respondents tended to use descriptive statistics rather than inferential statistics for analysis, the proportion using the more sophisticated inferential approach is higher among the university respondents than among those from other organizations.

In terms of their preparation for teaching, however, university respondents are very far behind other respondents

in this group; only one eighth of them hold a teacher certificate. By contrast more than three quarters of the school board respondents are certified teachers. We are led to the conclusion that educational researchers who have teacher training are less likely than those who are not certified teachers to hold the doctorate, and this distinction is statistically significant at the .01 level of confidence. In addition, respondents with teacher certification are less likely than those without to report research done or research in progress ($p<.05$), and also less likely to devote a major portion of their work week to research ($p<.05$). However, the teacher certificate background predisposes respondents to be in favour of more research into the curriculum areas ($p<.01$). These conclusions should be accepted with some caution, since the groups being contrasted are not strictly comparable in some ways.

Factors Related to the Undertaking of Research

Respondents indicate that their training and ability is the most important factor in their choice of research projects. Hence, the fact that researchers in non-university contexts tend to have practical training and experience may help to explain their tendency to criticize university researchers as being too theoretical and impractical. It is clear however that training and ability are not the only factors. The populations selected as sources of data often seem to be those close at hand to the researcher. Therefore, the university researchers use university students whereas school board researchers draw data from pupils available to them in the public schools.

Among the factors related to the selection of research projects, the availability of funds is indicated by respondents as the least important. However, when asked directly whether they would be influenced in their choice by a priority list published periodically by the I.R.E., half agree that they would. The wording of the question led the respondents to understand that such a list might help them to gain access to funds for research.

Kinds of Research Being Undertaken

Researchers in the different organizational contexts are interested in different research areas. The most common areas are first methods of instruction, especially at universities and others, second tests and measurements, especially at school boards and the universities, and third the psychology of learning, especially at universities. The research area least commonly cited is history of education.

The whole pattern of response shows that the theoretical emphasis in research is strong only at the university. By comparison, school boards researchers are more inclined to undertake the study of practical problems.

The fact that the quality of academic training is related to the organizational affiliation of the respondents is very obviously the result of the different career patterns that are typical of the various organizations. Respondents from universities are engaged in research and teaching because of their formal preparation for it, and therefore a graduate student aspiring to a university career obtains the appropriate academic training. Administration as an activity carried on by university

respondents appears to be a matter of factors other than training, such as personal ability, experience, rank, and seniority. By contrast, we assume that people in other contexts, particularly school boards, colleges and normal schools, who do research, have been "promoted" to this work in much the same way that capable university professors have been "promoted" to administrative posts. What this may mean is that many of the researchers in colleges and normal schools, and school boards, are doing research not because they were trained for it but because they were successful teachers and successful administrators at an earlier stage. While these comparisons are admittedly somewhat speculative, they are consistent with the differences in background of the respondents from two different contexts.

Interchanges with Other Researchers

We have already referred to the feeling that some initiative should be taken to increase the amount of interaction with other researchers. Apparently, the written word is not an entirely adequate form of communication. Personal contact is thought necessary. Some respondents indicate the desirability of interdisciplinary teams working on large projects, multidisciplinary meetings, and some more regularized ways of bringing researchers into contact with those who would be in a position to implement the findings of the research.

Again, the degree of interchange that takes place varies by organizational affiliation. University researchers, more than others, have fruitful interchanges. Perhaps this is because most collaboration with other researchers takes place within the researchers' own organizational context; this being the case,

the size of the university and the large number of researchers located there explain the more frequent interaction among researchers at universities than elsewhere.

In addition to their greater resources for collaboration within their own organization, it has also been found that university researchers cooperate with researchers outside the Province. On the whole, the United States are the largest source of external contacts, accounting for more of these even than the rest of Canada. The only other significant country in which interaction with Quebec researchers takes place is France. We assume that these interactions result from the contacts made during periods of graduate education, leaves of absence, and perhaps international conferences.

Despite all these evidences that some respondents collaborate with others both in and out of their own organizations, the great majority of educational researchers carry out their research alone. Educational research is often still handled on a one-man basis.

Problems Related to the Conduct of Research

A majority of the respondents indicate that there are personnel, equipment or other facilities needed for the conduct of research. While most of these needs have financial implications, the vast majority of respondents have not held research grants. For those who have, the National Research Council has been the most frequent source of support. Other important sources of research grants include the I.R.E., the Canada Council, and the universities.

The most frequently mentioned need is for funds, and this is usually justified by an indication of how the funds would be spent. The usual intention is to obtain more personnel, in particular non-student research assistants. In addition, one in four express a desire for access to experts who could guide them in their search for grants. There are also needs indicated for documentation, some kind of priority list of research areas, and for more time to apply to the actual work of conducting research.

The needs of researchers vary by organizational affiliation. For example, while a majority in universities and "other" indicate financial needs, only a small proportion of respondents in school boards, colleges, and normal schools do so. This may indicate that university researchers are expected to find their own funds for research whereas others, especially school board researchers, expect their funds to be provided for them by their own organization. Another difference is that researchers in the category "others" are more likely to say that their bibliographic resources are inadequate than the other respondents, most of whom do not specify any bibliographic needs. This probably reflects the difficulty of developing good research libraries in non-university organizations. When asked about the potential value of pre-publication of incomplete research, almost all respondents reply in the affirmative.

Contribution of Government Agencies

A majority of respondents seem to feel that the needs indicated above can be met by government agencies of various kinds. Hence, they feel that money must be made available for the purposes of obtaining assistance for publication, for

travel, and other such research-related activities. However, some respondents make a plea for flexibility in the types of grants offered such that a greater diversity of types of research could be undertaken.

Many researchers appear to feel isolated, and suggest that government agencies help to promote interaction among researchers in a variety of ways. Others feel that the government agencies are in a good position to facilitate access to data banks. A necessity for coordination is indicated, and some respondents feel that such coordination must be undertaken by government agencies. One approach to such coordination is the publication of lists of priority areas for research.

While government agencies are looked to for support and coordination there are mixed attitudes towards them. A few respondents seem to favour government control; a majority, however, are in favour of the maximum possible government contribution with the minimum possible control. Contributions are desired, but interference is feared.

A variety of reasons for working in a non-university context are presented by the respondents. Some indicate that they obtain greater freedom of action whereas others feel that by working in organizations like schools and hospitals, they have better access to the subjects of their research. Others feel that by working in a non-university context they are able to pursue more down-to-earth projects; still others feel that their resources are superior to those at university. In view of the fact that the major competitors for the researchers'

time are consultation, administration, and especially teaching, it is surprising that none of the researchers working in non-university contexts mentions the freedom from teaching responsibility as an advantage.

Research Activity

The above statements may give the impression that educational research is the object of a fair amount of activity. We would caution the reader against an inflated picture of the amount actually being done. It should be borne in mind that the respondents from the universities included in this chapter are a tiny proportion of the researchers in those institutions. Certainly, a much higher proportion of the researchers in the school boards, colleges and normal schools, have responded to this questionnaire. Despite this, only seven per cent of all the respondents in this chapter mention educational research as their major task. In fact, in those organizations where we would expect those in research posts to focus almost exclusively on educational research (school boards, colleges, normal schools), the proportion of respondents devoting a major part of their time to research is low. The category in which most respondents devote most of their time to research is "others". This must be because this category includes organizations whose major goal-orientation is research, and in which teaching is not required. However, a majority of respondents in the category "others" have been doing research for a shorter period of time than those at universities. Universities are the only organizations in which a substantial proportion of respondents have more than ten years of research experience.

In terms of the amount of research completed and currently under way, respondents at universities and "others" are much more productive than those elsewhere.

In conclusion, it must be pointed out that a great deal of educational research is carried on in contexts other than faculties of education. But in terms of long-term productivity, it must be borne in mind that the pursuit of research results in the training of new researchers only at the universities. There, the support of research results not only in the immediate solution to educational problems at a level of sophistication which is generally higher than elsewhere, but promises increased future capacity to tackle educational problems as students finish their training and take their place in the world of work.

Research Plans

On the whole, two thirds of the respondents indicate plans for educational research in the next two years. More than 35 per cent of university respondents either do not reply, or say that they do not plan to do educational research in the next two years. It should be borne in mind that the question asked for plans about educational research. Perhaps, had that qualification not been included, a higher proportion of university respondents might have replied YES.

Chapter V

SUMMARY AND CONCLUSIONS

This chapter will bring together information from the previous four chapters, and in addition, will summarize results of analyses of relationships among some of the factors that have been studied, especially those which have a bearing on research activities. This will enable us also to compare our findings from information provided by deans of education, by members of the faculties of education, by graduate students in education, and by those who are concerned with educational research but who are located in organizations other than faculties of education, such as normal schools, school boards and research institutes.

Before beginning the summary, one or two facts should be brought to the attention of the reader. First, it must be borne in mind that while most of our student respondents are enrolled in faculties of education, a significant proportion of them (about 28 per cent) are graduate students in other departments such as psychology and sociology, who are carrying on research or pursuing graduate programs related to education. Further to this, it must be understood that there is tremendous variation in the size of student enrolment from university to university, and for this reason we most frequently draw our generalizations from figures provided by respondents at the three largest universities.

In the presentation of the summary of findings in this chapter, we will not often be referring to part-time students. Where we do deal with data in which their patterns are quite different,

the distinction will be drawn to the attention of the reader, but before we get to this point, the reader should be aware that part-time students are less likely than full-time students to be pursuing degrees requiring thesis and therefore research, and that part-time students will usually obtain a great deal of their course work during summer school. It is generally agreed by the members of the faculties of education, that the quality of a graduate degree achieved through summer school is poorer than that obtained during the regular academic session (55 per cent of the faculty respondents say this) or is actually qualitatively different from degrees obtained in the more usual way (24 per cent indicate agreement with this judgement).

Our inclusion of researchers in organizations other than faculties of education is justified by the fact that their responses show that a substantial number of them - well over a hundred - are actually involved in educational research.

Definition of Research

We have already dealt with variations in the definition of research among respondents represented in the three previous chapters. Our comparison of researchers from different organizational contexts and of students shows that regardless of organizational affiliation or level (for the researcher or student), the areas of agreement and disagreement as to what constitutes research are much the same. The only possible significant differences are that students generally agree that "designing new curricula and methods of instruction" is research, whereas faculty members are split on this issue. Further, full-time students and researchers in other organizations are less convinced than faculty respondents and part-time students that "investigating factors which affect school administration" is research.

FIGURE 2

PER CENT OF FACULTY OF EDUCATION, FULL-TIME AND PART-TIME STUDENTS, FROM THE THREE LARGER UNIVERSITIES, AND RESPONDENTS FROM OTHER ORGANIZATIONS, AGREEING THAT PARTICULAR ITEMS ARE RESEARCH ACTIVITIES

ACTIVITIES	FACULTY MEMBERS	STUDENTS		OTHERS
		FULL-TIME	PART-TIME	
a) Collecting statistics on school practices and educational outcomes, sometimes called "school status studies".	34%	34%	37%	29%
b) Designing new curricula and methods of instruction.	51	72	64	60
c) Evaluating the effectiveness of new curricula and methods.	71	81	86	78
d) Local school surveys (curriculum, financial, plant, etc.)	35	33	34	23
e) Investigating factors which affect the teaching-learning process in the classroom.	80	84	85	80
f) Disseminating new curricula, methods of instruction, or other school practices.	16	29	25	21
g) Investigating factors which affect school administration.	42	24	45	26
h) General psychological studies of human learning or development.	69	69	68	72
i) Presenting evidence to legislators of the need for greater support for the schools.	9	8	14	11
j) Developing new tests and measurements.	65	60	70	61
k) Analyzing the key concepts or philosophical assumptions underlying current educational issues.	53	40	45	39
l) Studying the educational research journals for lecture materials.	9	17	20	9
TOTAL N	139	389	403	137

In our introduction, we expressed some concern as to the meaning of our findings about research when these findings resulted from information provided by respondents many of whom have differences in their definition of research. We have no such hesitations in this chapter since, as Figure 2 shows, with minor exceptions in two items, the patterns of consensus and dissent are virtually identical for professors and students and regardless of the organization with which the respondents are affiliated.

Background of Respondents

From the information provided by the deans, we have learned that the majority of professors of education have had their training in schools and faculties of education.

The background of the faculty members is of course determined to a large extent by the recruitment policy of the faculty. Faculty members inform us that in making appointments to faculties of education, candidates with a research degree are preferred in less than one third of the cases despite the fact that more than a third of the faculty members at Universities A and C (43 per cent and 38 per cent, respectively) feel that the research degree should be given preference. At University B, only about a fifth of the respondents feel that research degrees should be given preference in hiring new faculty.

At only one university, University C, is it observed that professors with training outside of a school of education are a majority in three departments. In terms of their research experience, only about half of the respondents in the faculties of education as a whole indicate that they have completed any research project. This

seems a rather small proportion and is probably too high a figure since the response rate for those who have done research is greater than for those who have not.

The background of a professor should give some indication of his capacity to do research. If a professor of education has completed a graduate degree which has required research, chances are better that he will do research, as a faculty member. However, fewer than one third of the respondents in the faculties of education indicate that, in making faculty appointments, a preference should be given to those with research degrees; about 12 per cent feel that those with a professional degree should be given preference and more than a quarter feel that no preference between professional and research degrees should be given. It is interesting to note that those faculty members who say that the research degree should be given preference are significantly more likely to have done research themselves.

To get some impression about what future staffing trends may be, we asked both deans and members of the faculty of education whether they would prefer to make new appointments from those with backgrounds in education or from those trained outside the faculty of education. In general, both deans and faculty members prefer to recruit new members whose training was in faculties of education.

The research emphasis is in many faculties of education a recent development. Therefore, on the whole, it is probable that faculty members with a background in a school of education are less research-oriented than those from other faculties.

Graduate students in education should be a major future source of education researchers, yet a vast majority of the graduate students in education are enrolled in graduate programs which do not require the thesis. Only three of the universities have doctoral programs in education, and the students enrolled in these programs total less than three per cent of all graduate students. The responses from faculty members indicate that although they feel that students should be directed into research degrees, most of them in actuality are directed into professional degrees not requiring research. Over half of the faculty believe that the emphasis on the doctoral program is insufficient and a slightly larger proportion feel that research graduate programs receive inadequate emphasis by comparison to professional graduate programs. The proportion of students with this view is smaller but is still almost half.

The only characteristics which are most common in all our respondents regardless of whether they are deans, professors, or students, are teacher certification and teaching experience. At least five of the deans have certification and all have teaching experience; over two thirds of the members of faculties of education are certified teachers; almost half of the full-time students and eighty-five per cent of the part-time students, are also certified teachers. Even of those respondents not in faculties of education, thirty-two per cent hold teaching certificates and thirty-one per cent have had teaching experience in elementary and secondary schools.

The characteristics of the student body result from admissions requirements. A large proportion of the respondents - deans, faculty members and students - feel that teaching experience and teaching certification are or should be mandatory for admission to graduate programs in education. Thus it appears that the

background actually required is that which is most suitable for graduate professional training. In fact, our analysis shows that those students with teaching certificates are significantly less likely to be pursuing degrees with research requirements, than those without.

Respondents with teaching experience in elementary and secondary schools are more likely to indicate the hope of a future career as an administrator. This does not mean however that students with teacher training and teaching experience are necessarily negative towards research. For example, our analysis shows that those with teacher certificates are significantly more likely to believe that teachers are better qualified to evaluate the results of their teaching than experts and are more likely to agree that the findings of educational research are useful in the class-room. Further, those with experience in teaching are significantly more likely to agree that teachers should be trained to do research on instructional methods in their own class-rooms. Nevertheless, it appears that an emphasis on the teaching certification background of graduate students in education is negatively related to research productivity, both present and future, on the part of those students so certified. And since the majority of graduate students are certified teachers pursuing non-research degrees, the potential for future educational research is not as high as it might seem on first inspection of the total numbers of such students.

Our analysis has shown that many student characteristics are not significantly related to the intention to go on to the doctorate. Such unrelated characteristics include age, whether they have teacher certification, whether they have teaching experience or administrative experience, whether they are engaged in

research other than for their thesis, whether they are more or less in favour of having courses outside of the faculty of education, of having theses evaluated by members of other faculties, and whether they believe the admissions policy at the Master's level should require teaching experience. Despite this, it must be borne in mind that a much larger proportion of our respondents state the intention to go to the doctorate than will probably do so; it may very well be that actually fulfilling that intention is related to such factors, particularly age and the length of teaching experience, but this is speculative. The relationship between the intention to pursue a doctorate and the expectation to carry out research in the future is not necessarily a one-to-one relationship, since there are doctoral programs which do not require research.

We have shown that teaching experience and certification are very common in the backgrounds of most of our respondents; but by contrast, the characteristic that seems most conspicuously absent is research experience. None of the deans has spent a year in which more than half of his time was devoted to research; almost two thirds of the faculty respondents have not had such experience and only ten per cent of part-time and eighteen per cent of full-time students have spent half time for at least one year in research. Even among those faculty members with research experience, only a small proportion has had research as a major commitment for three years or more.

It seems reasonable to assume that for many of those respondents who claim to have had a major commitment to research, the occasion of that commitment was the fulfilling of research requirements for a graduate degree requiring a thesis; yet, of

the faculty respondents in the three largest universities, less than a third hold a Master's degree with thesis and only twenty-nine per cent have a Doctor's degree with thesis completed. Another twenty-one per cent have completed requirements for the doctorate except the research.

Current Activities

Questions were designed to determine the extent to which respondents are actually involved in research. We learn that thirty-one per cent of the faculty respondents are spending ten hours or more per week on research whereas fifty-seven per cent are spending this amount of time preparing for teaching. Only six per cent of the respondents say that they spend no time on teaching but forty per cent indicate that they do not spend any time on research. Clearly, the pressure in faculties of education is for teaching and not for research.

When professors are heavily involved in teaching during the academic year, one possibility for getting research done is to devote the summer recess to that activity. However, almost two thirds of the faculty of education respondents indicate that they usually teach summer school as well, and others engage in activities such as the preparation of new courses, study, and reading.

One of the activities which involve faculty members in research is the supervision of student theses. Our findings are that only about one third of the professors of education are involved in this kind of activity. A majority of students

(except for part-time students at University B) say that there is a research requirement for the degree they are pursuing. They indicate that both they and their professors consider this requirement very important. About eight per cent of the students receive financial aid as research assistants, and about twelve per cent of full-time students indicate that their research projects are somewhat related to faculty research. Yet, almost half of the full-time respondents, and almost eighty per cent of the part-time students do not have a regular contact with a faculty member on a one-to-one basis. This seems to suggest that a large proportion of student research projects do not originate in faculty research and also that a minority of faculty members are doing most of the supervision of student research. Thirty-nine per cent of full-time students indicate that they have often worked together with professors in their faculty in research activities. About one fifth of the professors say they have worked often with students as research assistants.

This kind of collaboration is obviously very important in the development of research capabilities. Our analyses show that those who work as research assistants are significantly more likely to be those who have a research requirement for their degree, to study inferential statistics, to have research underway, and to plan to continue research after graduation.

The pattern of activities of students is very closely related to whether or not there is a research requirement in the degree being undertaken. Those with a research requirement are more likely to be full-time students, to be working in close collaboration with a professor in their own faculty, and in fact work as research assistants more frequently than other students.

In addition, a higher proportion of students with thesis requirements actively seek research funds through applications to granting agencies and work on research projects over and above that required for their own thesis. Clearly, all these activities are similar to those that will be required if research is to be undertaken in future years.

Therefore, if we are serious in our desire to increase the educational research potential, we must arrange programs such that more students interact with professors in all these research-related activities in the pursuit of graduate degrees which require the thesis.

Attitudes Related to Research

Among the faculties of education, there is no standard convention of using different names for degrees which require research (i.e. M.A., Ph.D.) and those which do not (i.e. M.Ed., Ed.D.). All these degrees and others exist; but one can not tell from the name of the degree whether or not the respondent has actually done research.

A majority of the faculty and students at the three larger universities believe that the Ph.D. should be a research degree and that it has higher prestige than the Ed.D.

Many of the students who plan to teach at the university level no doubt expect to do some research, since a majority of them say that all faculty members should do some research. In this, they are supported by just over half the faculty respondents

who also agree that all faculty members should do some research. University B is unusual in this regard with only fourty-eight per cent of the students, and only twenty-six per cent of the faculty agreeing that all faculty members should do some research. According to our respondents, university personnel are not the only ones who should be involved in the conception and conduct of research in education. This is especially true on the part of student respondents many of whom favour the heavy involvement of class-room teachers, school administrators, and behavioural scientists in other faculties. In fact, students feel that teachers are better qualified to evaluate the results of their teaching than experts. Faculty of education respondents and respondents in school boards, other university departments and normal schools, are less likely than students to agree that people outside the faculties of education should be heavily involved in educational research.

Factors Related to the Undertaking of Research in Education

If research is indeed a valued activity in education faculties, one would expect to see a positive relationship between research activity and rewards such as promotion to higher ranks. But rank is not related to the number of hours per week spent on research. More surprising perhaps is that the lower the rank of the faculty respondent, the more likely he is to have done, or be doing, research. Perhaps this is related to recent changes in recruitment policies; it may be that the newest members of faculty are likely to have been required to have a doctorate, or other research graduate degree. Another possible explanation is that the higher ranking professors are more likely to have time-consuming administrative duties and hence are not able to devote time to research.

No doubt the greatest competitor for the professors' time and energy is teaching responsibilities. A majority of the deans feel that teaching is the major responsibility of a professor of education, although one dean reports the existence of a professor concerned only with research and another indicates that he would agree in principle with having some professors of education occupied exclusively in research.

A majority of faculty members believe that the combination of teaching with some research activities is an ideal approach to the various possible roles of the education professor. However, a significant proportion of professors feel that teaching should come first, and that research must not interfere with the teaching process. In addition to this, double the proportion perceive that it is institutional policy that research must not interfere with teaching.

In response to the questions: "In your opinion, should all faculty members be required to do at least some teaching?" "In your opinion, should all faculty members be required to do at least some research?", a majority of faculty respondents at Universities A and C are in favour of faculty members doing at least some of both these activities; three quarters of the respondents at University B are in favour of all faculty members doing at least some teaching, whereas only about one quarter feel that all faculty members should do at least some research. The student respondents in the same three universities reflect very faithfully the opinions of the faculty members about these two questions. It is certain that attitudes towards teaching and responsibilities for teaching interfere with research activities and yet it is surprising to note that not a single respondent from the other organizations such as school boards and research institutes cites freedom from teaching as a reason for carrying out research in a non-university context.

We had hypothesized that people who teach summer school would not be able to do as much research as those who do not. However, our analysis shows no relationship between teaching summer school and research productivity.

There is a relationship between beliefs about teaching and research responsibilities and the attitude towards the value of research. Our analysis shows that those who believe that all faculty members should do some teaching are significantly more likely to believe that findings of educational research are generally of little help to the class-room teacher.

To some extent, research in education can be hindered by the demands of the school system for field services on the part of faculty members. The deans indicate that a small proportion of their faculty members are offering such services, but that an even smaller proportion (except for University A) are carrying out research. It may be that the demands for service absorb time and energy that might otherwise be put to the conduct of research.

The deans are aware that research is time-consuming and all of them consider research involvement when determining teaching loads for their faculty members. In addition, exemptions from committee and administrative work are accorded to researchers in faculties of education and a few receive additional remuneration for research undertaken during the summer. However, such concessions do not appear to be very widespread judging from the fact that deans feel the resources are not being badly strained by making such concessions; also

fewer than twenty per cent of the faculty members admit that they obtain concessions as to teaching time, fewer than ten per cent feel they obtain exemptions from committee work and only three per cent report that they receive extra remuneration for summer research. These concessions are not perceived in the same way by faculty members and by deans. We draw this conclusion from the fact that for every concession, respondents are more likely to see others benefit than themselves and some faculty members feel that the resources are fairly seriously strained by granting such concessions, not to themselves, but to others.

One possible concession that universities often make to researchers is the sabbatical leave. However according to the information given by the deans, very few faculty of education members have benefited from such leaves. The responses of the members of faculties of education show that only a small minority are actually aware of any sabbatical policies, and their replies concerning the specific details of sabbatical regulations show a great dissent even among those few who feel they know anything about such policies. Based on such various interpretations of sabbatical policies, twenty-three per cent believe that they are or have been qualified for sabbaticals, but only nine per cent have ever actually applied.

It is possible that administrators can have a fair amount of influence on the research activities in the faculty. We have already referred to the provision of concessions by deans to members of the faculty who do research. Faculty members are strongly in agreement (72 per cent) that administrators

should facilitate and actively encourage faculty research, but not necessarily direct research programs, and yet only half of that proportion feel that this is what the administrators actually are doing. Deans seem to agree with faculty members as to their appropriate role in this regard but there is some tendency on the part of deans of the French-language faculties to misperceive the desires of their faculty members. French-Canadian deans perceive their faculty members as desiring only facilitation and not encouragement, whereas their faculty members would like to be encouraged as well.

Members of faculties of education, researchers in other organizations, and students, were all asked to indicate which factors had influenced their choice of research problems in the past; the most frequent answer for all groups of respondents is training and ability; this would suggest that recruitment policies will have a bearing on the kinds of areas that are undertaken for research in faculties of education. Another important factor for all respondents is "current educational problems" and researchers who have as part of their duties teaching responsibilities are inclined to cite problems related to their teaching fields as an influence on their choice of research projects.

It is interesting to note that for all respondents the availability of funds is the least frequently cited factor influencing the choice of research problems. However, a majority of respondents in almost every category indicate that a priority list issued by the I.R.E. would influence their choice of research projects. One wonders, since I.R.E. is a fund-granting

organization, to what extent the availability of funds wou d influence the choice of research problems in the future.

Very few members of the faculties of education and educational researchers in other organizations have research grants. This may be related to the scarcity of funds for educational research in the past. A majority say that they have financial needs for research not being supported by grants and this is true of substantial proportions of student respondents and of researchers in other organizations as well. Between thirty and forty per cent of the non-student respondents in faculties of education and elsewhere had made applications for funds in the two years prior to answering the questionnaire and about a quarter of the students had also made such requests. It is clear that there are needs for funds which are not being met.

It is to be observed that those students who have financial needs not being supported by grants are more likely to have made formal application for funds, to have worked on research with professors in their own faculty, to have research projects under way, and to have plans for research in the future. This suggests that there are difficulties involved for students in conducting research but that those who are doing so re a promising source of future research capability; perhaps they deserve more financial support, than they are receiving.

As we have already pointed out, our analysis shows that compared to others, students who hold a research assistantship are significantly more likely to have research projects underway and to plan research in the future. We have also found that those students who are in favour of involvement of members of faculties other than education with them in their research, are more likely to have research projects underway than other students.

Kinds of Research Being Undertaken

One research area most closely related to the professional interest of educators is undoubtedly curriculum, and this is where deans express a strong desire for research activity. Other areas seem to belong in other departments such as psychology; these include adolescent and child development, research methodology, talent and creativity of students. Yet, judging from the type of projects actually under way, faculty members are not much interested in curriculum research. The three most frequently researched areas, in order are as follows: first, tests and measurement; second, educational administration; third, psychology of learning. The only curriculum area with nearly as large an amount of work being done is the teaching of reading. However, where faculty respondents were given the opportunity to suggest areas in which they would like to see more research undertaken, they express preferences for a wider range of research areas than were actually being studied at the time of the survey. Respondents in school boards, normal schools, and other research organizations, express preferences similar to those of faculty of education respondents. Those respondents in organizations other than the faculty of education who are qualified teachers are significantly more likely than others to express a desire for research in the area of curriculum.

Researchers were asked to indicate whether they emphasize research designed to expand theory, research designed to improve educational practices, or both. A majority of the respondents in almost every organizational context (the only exception is school boards, where the preference is to improve practice) prefer to emphasize both theoretical and practical aspects in their research. However, where one is chosen in preference to the other, respondents seem somewhat more practically than theoretically oriented.

Respondents were also invited to indicate whether they tended to emphasize research in professional areas such as administration, or in academic areas such as psychology or philosophy, or both about equally. Here, we see a decided preference for research in academic areas, both among researchers in faculties of education and among those in other contexts - even school boards. One wonders if educational - researchers do not undertake the study of the professional aspects of education, who will?

There is a nucleus of people interested in doing research in practical areas however, and whether these are located in faculties of education or other organizations, they are less likely to be interested in the academic than in the professional questions.

Closely related to the quality of research being done are the methods of data gathering and analysis. The most popular data gathering method among faculty of education researchers is the experimental method, questionnaire being second, and the use of available data, third. Researchers in organizations other than the faculties of education emphasize the use of the experiment and the questionnaire about equally. Students, on the other hand, seem to favour the questionnaire approach, followed by an almost equal emphasis on experimentation and interviewing.

As to analytic approaches, the most common approach is descriptive statistics followed by the use of inferential statistics. Theoretical and comparative analysis are also frequently used in educational research.

Interaction with Other Scientific Personnel

In faculties of education, interaction with members of other faculties or organizations can be set up as a matter of policy through requiring students to take courses outside of the faculty of education as is fairly common in the French-language faculties. Another general focus of interorganizational interaction is thesis evaluation. However, this comes out at a very late stage in the conduct of research and probably has much less influence on the quality of research being done than patterns of interaction that take place earlier in research projects.

The interchange of ideas also results from the use of visiting professors, particularly during summer school sessions in faculties of education. Therefore, judging from information given by the deans, there is a good deal of interchange with personnel in relation to the graduate training of students in education. The faculty members, especially in the French universities, and the students as well, are favourably disposed towards the use of professors from other faculties in the training of students, and in the supervision of their research. In fact, although there is some controversy about this, a good proportion of students believe that those who wish to make a career of educational research should receive most of their research training from professors in the behavioural sciences outside schools of education. In addition, a majority of faculty members, and thirty-four per cent of the students, agree that members of other faculties could be helpful in evaluating education students for the degree.

This positive attitude to the interaction of students with members of other faculties does not appear to be reflected

in the opinions of the professors of education. Deans indicate that there has been little interchange on the part of the faculty with other academic personnel, but that what has taken place has been reasonably fruitful. However, one dean mentions an attitude of superiority on the part of some members of other faculties in their dealing with professors of education, which may act as a deterrent to collaboration. The large proportion of the professors of education themselves, report that interchanges have not occurred. This is in sharp contrast to researchers in organizations other than faculties of education, the great majority of whom have cooperated in their activities with members of other departments or organizations.

Members of the faculties of education were asked more specifically about the existence of particular kinds of interchange. They report visiting professors for teaching, outside professors for thesis evaluation, joint teaching appointments, interdisciplinary seminars, visiting professors for research, and joint research appointments. More especially with regard to research, faculty members, students, and researchers in other organizations were asked to indicate to what extent they had worked together with other scientific personnel, both in and out of their own organization. Only about a third of the respondents from faculties of education have worked often with colleagues in their own organization, whereas almost double that proportion of researchers in other organizations have worked with their colleagues in research activities. In fact, we find again a tendency for faculty of education researchers to collaborate less with others in their research than members of other university faculties.

It is clear that members of the faculties of education are not as accustomed to working together with other scientific personnel as are those in other university faculties. The differences are even more striking by university, the proportions in University B collaborating with others are very much lower than those in Universities A and C.

Where research interaction occurs with others outside of the organization, three quarters of the respondents interact with researchers in Quebec, one quarter with researchers in the rest of Canada, one quarter with researchers in the U.S.A. and about one seventh with researchers in France.

Research activities seem to involve faculty of education researchers in direct interaction with others who are not researchers, as frequently as with other researchers. Thus their work brings them into contact with teachers, pupils, professors, school principals, subject supervisors and other such personnel. However, it is interesting to note that despite the fact that we would expect them to have better contact with public school personnel than other researchers, the extent of research interaction with such school people by researchers in other organizations appears to be about the same as that for members of faculties of education.

Attitudes towards Interaction

Educational problems often lend themselves to team approaches and interdisciplinary research. We asked faculty members about their attitudes towards interaction with people

from other organizations. There is considerable interest expressed in having visiting professors for research activities and also interdisciplinary seminars; joint research appointments are favoured by about half of the faculty of education respondents and forty per cent agree with the idea of having joint teaching appointments and the desirability of professors from other faculties evaluating education thesis. In fact, there is only one area of interaction for which a good proportion of respondents are not in favour and that is the participation of non-education professors in the selection of members of the faculty of education, only about one in six being in favour of this.

On the whole, those members of the faculties of education who responded to our questionnaire seem to favour interchange with other personnel and our analysis shows that there is a significant relationship between favourable attitudes towards interchange for joint research appointments, joint teaching appointments and for thesis evaluation, and having done research. Further those who are currently spending time on research are significantly more likely than others to be in favour of joint teaching appointments.

Problems Related to the Conduct of Research

Education faculties have not been noted for a large volume of research in the past, and faculty respondents in the three largest universities feel that the relative importance given to research in their faculties is less than that in their universities as a whole. This is undoubtedly related to a series of difficulties and their responses indicate that some of these problems are the following: needs for funds (as already noted), needs for equipment, shortage of bibliographic resources (particularly

information on on-going research, final research reports, abstracts, microfiches, and microfilms). This last set of difficulties for educational researchers (bibliographic resources) is shared by graduate students in education as well, but apparently not by researchers in other organizations, particularly universities. This difference in the shortage of bibliographic resources between faculties of education and other university departments is particularly striking as is shown by the fact that such shortages are noted by a majority of students and professors in education in almost every case, whereas the poor availability of final research reports and of reports on on-going research is indicated by well under a third of those responding from other university departments. In addition, the proportion of respondents noting that availability of abstracts, microfiches and microfilms is poor, in universities, is only about a quarter that of students and professors of education.

Another hindrance to the research activities of members of faculties of education is the fact that, with the possible exception of University A, research units or bureaus do not exist.

One way to learn what the difficulties are, is to ask the respondents what contributions could be made that would assist them substantially to increase their research activities. This was done and many suggestions were made. The need for financial support, for information about current research in Quebec, for technical assistance and consultation services, and the need to have research sponsored, were mentioned by respondents in all major categories.

Other suggestions included the creation of research centers or teams (no faculty of education member suggested this, however), grants to students, and assistance in the publication of research findings. Each of these was mentioned by respondents in three of the four major categories. Other frequently mentioned needs included assistance in the planning of research, the provision of a centralized education library for Quebec, information concerning sources of grants, techniques to favour exchanges between researchers, and equipment. These were all mentioned by two major categories of respondents. Finally, each of the following suggestions for the improvement of research was made from one of the major sources of information: facilitation of access to population; secretarial assistance; provision of research courses; provision of an opportunity for research experience; more space; more time; documentation service; information retrieval service; data bank service; and travel assistance.

The situation in faculties of education is not all negative however, as members of a faculty of education appear to have certain advantages when it comes to the access to school personnel as sources of data. This is indicated by the fact that professors of education and their students tend to draw their data from public school sources whereas other university researchers are more likely to use populations more easily available to them, such as university students. Researchers in faculties of education should be encouraged to take advantage of their personal and professional contacts in the public education system.

Training of Researchers

Data from all of our sources indicate that in no organization are major efforts being applied to the training of educational researchers. Judging from the responses of the deans, fewer than one student in twenty are preparing themselves for research careers; and, faculty members indicate that only one in five student is being directed into a research graduate program. In faculties of education, the main effort seems to be applied to the professional training of educators. This is not surprising in view of the statements of the deans that no requests for researchers have been addressed to them. Both professors and students feel that the emphasis on research programs relative to programs of professional preparation is insufficient or greatly insufficient.

It is only from doctoral programs that truly sophisticated educational researchers are likely to emerge, and yet enrolment in doctoral programs is rare. And among professors of education, there is general consensus that the emphasis on the doctoral program relative to the graduate program at the Master's level is insufficient.

Many of our sources indicate that a majority of graduate students in education pursue their studies on a part-time basis. One of the ways of providing this is through summer courses. There is among faculty members general agreement that the graduate research degree achieved through summer school is poorer than one achieved during regular sessions.

Students feel that the findings of educational research are generally of little help to the class-room teacher. This is probably related to their stated belief that the research techniques and methods used in educational research lag behind those used in behavioural science, generally. And yet, these same respondents do not recommend that graduate students wishing to make a future career of educational research, should receive most of their training from professors in behavioural sciences outside of the schools of education. Since a majority of respondents in organizations outside of faculties of education are not involved in the training of educational researchers, it may be that an important way of increasing the supply of educational researchers is to appoint behavioural scientists to faculties of education.

Research Activity

This is the area in which comparison between respondents at different levels and in different contexts becomes particularly difficult, both because of the lack of consensus in the definition of research already referred to, and because of the differences in response rates from the different groups. On this latter point, the reader should be aware that we attempted to have all faculty of education members respond whereas researchers in other organizations were encouraged not to reply unless they were in some way involved with or interested in educational research. Yet a few points can be made.

In faculties of education, a majority of professors and students who have completed research in the past, have only one project to their credit. Other researchers are more likely to have completed a number of projects. A consistent factor

negatively related to research activity is a background of teacher certification. In the case of education students and researchers in organizations other than faculties of education, those with teacher certificates are significantly less likely than those without, to have research projects in their backgrounds or underway. And while the relationship between teacher certification and past and current research activity is not significant for professors of education, the trend is without exception in the inverse direction. An insistance on teacher certification in faculty members and graduate students appears to reduce productivity in research on education.

Educational research seems to require a team approach. This we conclude from our general findings that interaction with others and favourable attitudes towards interaction with other scientific personnel are positively related to research productivity. This is true of career researchers and students. Thus, professors active in research have greater contacts with scientific personnel in other organizations, than those who do not do research; and students active in research are those with contacts on a one-to-one basis with their professors, through work on common research projects, sometimes as research assistants.

Another set of factors closely related to research productivity of both professors and students, is the availability of support personnel such as secretaries, typists, and so on, or an expressed need for such assistance. Furthermore, needs for financial assistance are also generally more characteristic of those who do research than of those who do not.

Research Plans

Respondents were asked to indicate whether or not they had plans for research in the next two years or, in the case of students, after graduation. In almost every category, a majority of respondents indicated that they did have such plans. In fact, the proportion of those planning research is so much larger than that of respondents currently engaged in research, that one must either conclude that there will be a very large increase in research activities in the immediate future or perhaps, more realistically, that many of these plans will not actually come to light. The only categories of respondents in which a majority are not planning research are part-time students at University B and respondents from school boards. Further, a significantly smaller proportion of faculty respondents at University B (58 per cent) are planning research, compared to those at Universities A and C (over 90 per cent).

Despite the scepticism indicated in the above paragraph about these plans coming to fruition, our analysis suggests that these figures should be taken seriously, because it shows that those who actually are spending time on research and those who have spent time on research in the past are significantly more likely to be planning research than others. This is true of both faculty and student respondents. Moreover, there have been additional funds made available to educational researchers in the immediate past, particularly by Canada Council, and I.R.E.

Research degrees presumably prepare students for some research in their subsequent careers. Yet, according to the deans, about ninety per cent of the graduates are planning to work in school systems and about ninety per cent of the faculty

respondents say that the number of graduate students in education planning research careers is too small. While the deans say that they do not receive requests for graduates to fill research positions, a majority of the student respondents say that they will do "some research" and fully thirty-three per cent of the students who take graduate education indicate a desire to teach or to do research at the university level. There appears to be a great discrepancy between the impression given by deans and faculty members on the one hand, and the graduate students on the other. Possibly, most of the students who say that they are planning to do some research, do not expect this research to be a very major part of their responsibilities; "some research" is almost always not equivalent to "research career".

In fact, our cross-tabulation of responses shows that those who are planning doctoral studies are significantly more likely to be planning research after graduation. Perhaps one reason that such a high proportion of students are expecting to do research (despite the observations of the deans that almost none plan research careers), is that a majority of students are planning to go on to the doctorate. This, judging from the small proportion at present enrolled in doctoral programs (under 3 per cent), seems extremely optimistic. Yet, our analysis shows that those who have a one-to-one contact with professors are more likely to be planning to continue toward a doctorate, than those without such contacts. Additionally, those who hold research assistantships are significantly more likely to be planning to carry out research after graduation. This suggests that any increase in the research activities of professors which involve students will have a double value, by expanding current research and by improving the future potential. The increasing support for educational research noted above gives us a good reason for optimism about the future.

RECOMMENDATIONS

Our study has led us to a better understanding of some of the variables related to research productivity in education. We are prepared to make a number of recommendations that might be considered in planning the future for educational research. We simply present them as numbered statements.

Background

1. Steps should be taken to encourage the hiring by the schools of education of new professors with behavioural science training and background, and research capacities.
2. Teacher training or teaching experience in public schools should not be considered as absolute pre-requisites for hiring by a school of education.
3. At the present, academic rank in faculties of education seems to be inversely related to research activity, past and present. Research should be encouraged by making it an important factor for advancement in a career as professor of education.
4. Graduate schools of education should not insist on teacher training or teaching experience as a requirement for admission of all students to research graduate education programs.
5. Steps should be taken to encourage candidates to a graduate degree to enroll in their program as full-time instead of part-time students.
6. Steps should be taken to encourage candidates to a graduate degree to enroll in programs requiring research.

7. Steps should be taken to encourage those students at the Master's level who wish to go on to pursue doctoral studies, to realize their intentions.

Activities

1. Schools of education should develop more flexible definitions of the roles of their professors so that research can be prominent for more faculty members than at the present time.
2. Priorities should be established so that teacher training and educational service activities do not absorb all the time and energies of professors of education qualified to do research.
3. Arrangements to facilitate research - for example, reduction of teaching loads and student supervision duties, exemption of committee work - should be established on a regular basis in faculties of education and professors should be informed that these are available to them.
4. Sabbatical leave policies should be improved or established and those should be communicated so that faculty members are fully aware of the possibilities of sabbatical leaves for the up-grading of research skills, and for the completion of research projects.
5. High level posts for professors who are skilled in and have a major commitment to research should be made available. For example, an assistant dean could be responsible for the development and coordination of research activities, leaving the dean responsible for the commitment of the faculty to professional preparation.

Interaction

1. Research in education requires cooperation between researchers. To this end, the establishment of research centers, bureaus, or departments, may help to bring enough researchers together.
2. The interaction of researchers with other researchers within their own organizations should be encouraged.
3. Travel grants and other incentives should be offered to encourage faculty members to interact with other researchers.
4. Joint research appointments should be encouraged.
5. Visiting research professorships might be allowed for in faculty budgets.
6. Students should do part of their course work outside their own faculty.
7. Forums for the interaction of researchers should be established.
8. Steps should be taken to encourage the formation and retention of links with the research communities of outside of the province.

Factors Related to the Undertaking of Research

1. The possibility of a better use of the summer recess for research activities should be investigated.
2. The establishment and publication of lists of priority areas in educational research should be undertaken. Incentives to both faculty and student researchers who work in priority areas should be provided.

3. Both student and faculty researchers should be offered assistance for the publication of their research findings.

4. Many non-research activities are emphasized by deadlines, scheduled meetings, and the like, such that research activities tend to be set aside. This problem should be studied.

Kinds of Research Being Undertaken

1. The continuation and expansion of research in a variety of organizations should be encouraged, since this will result in a greater variety of types of research undertaken.

2. Attempts to coordinate research done in the different organizations should be made, but not in such a way that researchers feel that their freedom to be creative is threatened.

3. Educational researchers should be encouraged to select topics that are educational in nature, and not to try to duplicate what is already being done by behavioral scientists in other faculties and departments.

4. The tendency to work in areas that have practical implications for professional educators is not at all marked at present. Steps should be taken to change this.

Meeting Needs and Offering Incentives

1. More scholarships and bursaries should be provided for research-oriented students, especially for those undertaking the doctorate.

2. Increased financial support for specific research needs should be made available.

3. Researchers should be given assistance in writing proposals for grants.

4. Sources of funds outside of Quebec should be made accessible to Quebec researchers through information and guidance.

5. Faculties should include in their budgets funds that may be used at least for the development of research projects so that more sophisticated proposals may be directed to other sources of funds.

6. Where faculties are small, assistance should be made available to up-grade the quality of research being done, through improved research design and better statistical and other analyses.

7. Faculties should provide back-up services such as secretaries, typists and assistants, similar to those available in the most productive departments of the university.

8. The I.R.E. or a similar organization should develop and provide access to data banks for student research projects.

9. Steps should be taken to improve bibliographic resources such as microfilms and microfiches. There is a particular need for information about on-going incomplete research.

10. Information retrieval services similar to ERIC, but including information from a wider range of sources, i.e. French-Canada, France, etc., should be made available.

11. All researchers in Quebec should be provided with rapid access to all library catalogs in the province, and ultimately beyond the province, if possible, through agreements with the Maritimes, Ontario, New England and New York. Computer systems may be most useful in this.

Training of Researchers

1. We have already suggested that the presence of researchers in a variety of organizations is desirable. However, the amount of publicly founded research in non-teaching organizations should be strictly limited since there is no production of future researchers in such organizations.

2. Within the teaching organizations themselves, authorities should encourage research which heavily involves students, by preferential grants systems.

3. Steps should be taken to encourage increased contact of students with professors on a one-to-one or small group basis. This might include support for research professorships, the provision of research assistantships for students, and other incentives.

4. Training for action research should be included in the professional graduate programs so that those who plan to become teachers, counsellors, and administrators, will use their professional activities to learn more about education.

5. Research programs to discover how to make practising teachers more research-oriented, both as producers, assistants and consumers, are needed.

6. The quality of research methods and analytic processes used in educational research, both by students and by professors, should be up-graded.

7. Steps should be taken to improve the research capabilities of summer school students.

Job Opportunities

1. An attempt should be made to develop job opportunities within the province for educational researchers. This might include the creation of research professorships in universities, and research directorships in school boards. Also, an attempt should be made to obtain an inventory of already existing positions in which educational research activities would be desirable.

2. We should beware of any attempt to develop programs within the province adequate to the training of all our educational researchers. It is good to import and to export researchers and we should try not to be parochial in this field.